

record-keeping and reporting requirements in connection with call centers.

1. Call Centers

21. Background. In the *E911 Scope NPRM*, we recognized that satellite carriers face unique technical difficulties (vis a vis terrestrial wireless carriers) in implementing both basic and enhanced 911 features.⁵⁰ Cellular carriers interconnect with local wireline carriers at many points throughout their service areas, enabling them to make use of existing facilities to route 911 calls directly to appropriate local PSAPs in the areas where the calls are placed.⁵¹ By contrast, satellite systems have only a small number of (or just one) public switched network interconnection points (i.e., at gateway stations) in the United States and do not interconnect directly with most local wireline carriers.⁵² The lack of local interconnection points makes basic 911 service more difficult for satellite carriers than terrestrial wireless carriers.⁵³ Still, we were encouraged that some MSS providers had established their own emergency call centers to answer 911 calls. Mobile Satellite Ventures Subsidiary LLC ("MSV") subscribers can dial 911 on their handsets for emergency assistance.⁵⁴ Trained operators at MSV's Reston, Virginia call center request the caller's phone number and location, then cross reference the location information with a national PSAP database to determine which PSAP should be connected to the caller.⁵⁵ Similarly, Globalstar customers can dial 911 (and certain other internationally recognized emergency codes) in order to access an emergency call center located in Canada. Trained operators first ask for the caller's phone number, then instruct the caller how to use the handset to obtain his/her latitude and longitude coordinates, which the Globalstar system can determine to within an average of 10 kilometers, 90% of the time.⁵⁶ The operator enters the coordinates into a national PSAP database that finds the most appropriate PSAP based on the caller's location.⁵⁷

22. Believing that a call center requirement might accelerate the delivery of emergency service to MSS industry-wide, we proposed that all GMPCS licensees providing real-time, two-way, switched voice service that is interconnected with the public switched network establish national call centers to which all subscriber emergency calls are routed. With few exceptions, the call center proposal elicited support from both satellite and public safety communities. MSV believes that it is economically and technically feasible for any MSS provider to comply with a call center requirement within one year of adopting a requirement.⁵⁸ ICO supports the call center requirement for real time, two-way switched voice service,⁵⁹

⁵⁰ *E911 Scope NPRM*, 17 FCC Rcd at 25584, para. 22.

⁵¹ *Satellite 911 Public Notice*, 16 FCC Rcd at 3782.

⁵² In order to place a satellite telephony call, an "outbound" communication from an MSS mobile phone is transmitted up to the satellite, using "service link" frequencies. The satellite then retransmits the signal back down to the earth, using "feeder link" frequencies, to a gateway ground station, where the call is interconnected with terrestrial networks, such as the PSTN. The return or "inbound" communication works the exact opposite way. The communication from the terrestrial network is transmitted from the gateway earth station up to the satellite, and then retransmitted by the satellite back down to the MSS mobile telephone. In systems with inter-satellite links, the inbound and outbound communications may be transmitted through multiple satellites in order to complete the connection between the originating mobile telephone and the receiving gateway ground station.

⁵³ Inmarsat *Satellite 911 Public Notice* comments at 4 (arguing that basic 911 should not be required for MSS due to the small number of interconnection points); ICO *Satellite 911 Public Notice* comments at n.13.

⁵⁴ *E911 Scope NPRM*, 17 FCC Rcd at 25584, para. 20.

⁵⁵ *E911 Scope NPRM*, 17 FCC Rcd at 25584, para. 20.

⁵⁶ *E911 Scope NPRM*, 17 FCC Rcd at 25584, para. 21.

⁵⁷ *E911 Scope NPRM*, 17 FCC Rcd at 25584, para. 21.

⁵⁸ MSV comments at 8.

⁵⁹ ICO comments at 6-7.

as does Globalstar.⁶⁰ Intrado believes that the call center proposal “appears to strike a fair balance.”⁶¹ The limitations, according to Intrado, include delays that could result when a call center conferences in a PSAP and the lack of automatic relay of the caller’s number when the emergency call is conferenced to the PSAP.⁶² Intrado would prefer call centers to deliver callback number and location information to the PSAP, but in the interim suggests that public safety and industry field test new solutions rather than have the FCC set “regulatory mandates.”⁶³ Benton County believes that MSS customers have 911 expectations, acknowledges technical difficulties in locating callers and transferring calls to PSAPs automatically, and finds call centers an appropriate solution for now.⁶⁴

23. Inmarsat and Iridium argue that call centers are not warranted, albeit for different reasons. Inmarsat says that due to the nature of its network and the relationships it has with the entities (land earth station operators, or LESOs) that provide service to end users, emergency call centers are not feasible.⁶⁵ Inmarsat says it is not involved in the routing of calls and therefore is not capable of establishing and operating call centers and thus is not able to comment on LESO issues with regard to call centers.⁶⁶ Iridium believes that the use of call centers would “result in delays and the potential for human operator error.”⁶⁷ Instead, Iridium recommends that MSS systems route emergency calls to a single number within the state where each call originated.⁶⁸

24. Discussion. We find that, on balance, the record supports adopting a call center requirement for MSS. The inability of satellite carriers to provide basic 911 service at the present time convinces us that emergency call centers are an appropriate first step for MSS carriers. The low volume of 911 calls that MSS carriers currently receive (relative to terrestrial CMRS) further justifies a call center requirement, rather than enhanced 911.⁶⁹ Some MSS carriers note that call centers can be implemented at a reasonable cost,⁷⁰ and public safety entities support a call center requirement.⁷¹ We believe that in addition, call centers do not require significant network upgrading or retrofits and thus can be deployed relatively quickly. We disagree with Iridium’s contention that call centers will introduce human error and result in the delay of emergency response.⁷² Globalstar and MSV report that they have not experienced any such problems.⁷³ Moreover, we find that MSS call centers, much like telematics call centers, may

⁶⁰ Globalstar comments at 3.

⁶¹ Intrado comments at 7. Intrado is a “provider of sophisticated solutions that identify, manage and deliver mission critical information for telecommunications providers and public safety organizations.” Intrado comments at n.1.

⁶² Intrado comments at 8.

⁶³ Intrado comments at 8.

⁶⁴ Benton County Emergency Service E911 Program (Benton County) comments at 2.

⁶⁵ Inmarsat comments at 2, 4, 8.

⁶⁶ Inmarsat comments at 8.

⁶⁷ Iridium reply at 4.

⁶⁸ Iridium reply at 4. Iridium states that it has this capability. *Id.*

⁶⁹ Globalstar receives an average of 12 satellite 911 calls per month. Globalstar comments at 2. MSV reports that it received ten emergency calls in 2002. MSV comments at (ii).

⁷⁰ MSV characterizes the call center costs as “minimal.” MSV comments at 8 and reply at 9-10. *See also* Globalstar comments generally and ICO comments at 9-10 (saying that call centers “can be implemented at greatly reduced costs”); Stratos comments at 5.

⁷¹ *See* Intrado comments at 7; Benton County comments at 2; National Emergency Number Association and National Association of State Nine One One Administrators (“NENA/NASNA”) comments at 6.

⁷² Iridium reply at 4.

⁷³ Globalstar comments at 2-3; MSV comments at 9.

actually provide a benefit by filtering calls that do not require PSAP assistance.⁷⁴ Therefore, we will require that all MSS licensees providing real-time, two-way, switched voice service that is interconnected with the public switched network establish national call centers to which all subscriber 911 emergency calls are routed. We are pleased that MSV and Globalstar already have emergency call centers in place. We believe the time is ripe for a uniform requirement to apply to all providers of MSS voice service. This will ensure that MSS customers have access to essential emergency service and remove any potential confusion in the marketplace as the industry continues to grow. Since call centers can be implemented without substantial delay for technological or cost concerns, the call center requirement will become effective 12 months after publication of this *Report and Order* in the Federal Register.

a. Carriers Subject to the Call Center Requirement.

25. Background. As noted, we will limit our call center requirement to those MSS carriers providing real-time, interconnected switched voice service. Some commenters ask that we clarify that any 911 MSS rules we adopt will not apply to space segment (*i.e.*, space station) licensees and MSS resellers.⁷⁵ MSV argues that the MSS space segment licensee is not necessarily the same entity that provides MSS service to end user customers.⁷⁶ Inmarsat points out that it provides only the space segment, and has relationships with land earth station operators (LESOs) that actually provide service to end users.⁷⁷ As such, Inmarsat says that it is not involved in the routing of calls, thus rendering any 911 service, including call centers, infeasible.⁷⁸ Stratos Mobile Networks, Inc. ("Stratos"), a distributor of MSS as both a gateway operator and reseller, argues that "only gateway operators (as opposed to MSS space station operators or non-facilities-based MSS resellers)" should be subject to 911 requirements since the gateway controls all of the MSS caller's "call-identifying information" for routing and billing purposes.⁷⁹ MSV counters that any 911 requirements must apply to any entities providing interconnected voice MSS to end users, otherwise "wholesale voice MSS providers would be in the difficult position of having to monitor their resellers' compliance with the 9-1-1 rules and to enforce these rules."⁸⁰

26. Discussion. We agree that the obligation for compliance with 911 rules should not be on the space station operator, provided that it is not also providing MSS service directly to end users, since it will not have any control over the switching of calls over the public switched telephone network (PSTN). Therefore, the entity responsible for complying with 911 requirements will be the MSS service provider (*i.e.*, the entity providing service to the end user customer, including facilities-based resellers). We conclude that non-facilities-based resellers of interconnected switched voice MSS service to end users have an obligation to ensure access to 911 service to the extent that the underlying facilities-based licensee offers access to 911 service. This is consistent with our analysis of 911 obligations for resellers of terrestrial wireless service.⁸¹

27. In addition, MSS will be exempt from complying with MSS 911 requirements to the extent that they provide maritime or aeronautical service. The Commission has already excluded maritime and

⁷⁴ See *infra* para. 75.

⁷⁵ Inmarsat comments at 8; MSV comments at 12.

⁷⁶ MSV comments at 12-13.

⁷⁷ Inmarsat comments at 2, 4, 8.

⁷⁸ Inmarsat comments at 8.

⁷⁹ Stratos comments at 7-8.

⁸⁰ MSV reply at 12.

⁸¹ See Section D, *infra*. MSV indicates that resellers of its voice services have access to MSV's call center for 911 calls. (MSV reply at n.21).

aeronautical services from the terrestrial wireless 911 rules, despite the fact that they are two-way switched voice services, because passengers and crews of ships at sea rely on Global Maritime Distress and Safety System ("GMDSS") for emergency and distress, while passengers and crews of airplanes use other radiocommunication channels for emergency assistance.⁸² We do not see any need to require MSS carriers to provide more than one form of emergency access service.⁸³ Maritime and aeronautical MSS users already use other forms of emergency service (such as GMDSS), and overlay of a 911 emergency system may introduce unnecessary confusion.⁸⁴

28. We will also exempt from MSS 911 requirements any service that utilizes terrestrial temporary fixed earth station terminals. Stratos and Inmarsat assert that the earth terminals used in their systems are larger than conventional handsets (laptop computer size), and can require several minutes set-up time in order to acquire the necessary satellites to establish a communications link. These devices are temporarily fixed in nature because they cannot be used while in motion. Inmarsat notes that its terrestrial terminals are not designed to be used in motion because the antenna must remain pointed at the satellite.⁸⁵ Inmarsat C terminals can be mounted in vehicles but are designed for data transmission only.⁸⁶ Based on the current technology and limited number of specialized users, we do not believe that users of these types of devices have a reasonable expectation of access to 911 service.⁸⁷ We reserve the right to revisit the temporary fixed earth station exemption in the future should the technology or consumer expectations change.

b. Call Center Procedures

29. Background. In the *E911 Scope NPRM*, we asked whether we should mandate call center answering protocols and procedures.⁸⁸ We noted that the effectiveness of an MSS call center depends on the access to a comprehensive national PSAP database, and consequently we also asked for comment on whether carriers should be required to compile such databases and whether carriers should have an obligation to maintain database accuracy and completeness.⁸⁹ We also observed in the *E911 Scope NPRM* that MSS calls might originate from areas where no other communications options exist, and consequently where no PSAP has been designated.⁹⁰ In a previous proceeding, the Commission established procedures for carriers to follow in the event that a PSAP has not been designated for a caller's area.⁹¹ We sought comment in the *E911 Scope NPRM* on whether and in what time period MSS

⁸² *E911 First Report and Order* at para. 82; see also 47 C.F.R. § 80, Subpart W.

⁸³ See MSV comments at 14; Globalstar comments at 12.

⁸⁴ See Stratos comments at 3; Inmarsat comments at 5.

⁸⁵ Inmarsat reply at 5 n.10; see also Inmarsat comments at 3 and n.3.

⁸⁶ Inmarsat reply at 5 n.10; see also Inmarsat comments at 3 and n.3.

⁸⁷ See Stratos comments at 3; Inmarsat comments at 2-3; Telenor reply at 3.

⁸⁸ *E911 Scope NPRM*, 17 FCC Rcd at 25585, para. 24.

⁸⁹ *E911 Scope NPRM*, 17 FCC Rcd at 25585, para. 24.

⁹⁰ *E911 Scope NPRM*, 17 FCC Rcd at 25585, para. 25.

⁹¹ Specifically, by September 11, 2002, the Commission required that, in areas where no PSAP has been designated, carriers must begin delivering 911 calls:

(a) to a statewide established default point; (b) if none exists, to an appropriate local emergency authority, such as the police or county sheriff, selected by an authorized State or Local entity; or, finally, (c) as a matter of last resort and to avoid the blocking of 911 calls, . . . to an appropriate local emergency authority, based on the exercise of the carrier's reasonable judgment, following initiation of contact with the State Governor's designated entity under section 3(b) of the 911 Act.

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carriers would be able to comply with these same procedures in order to ensure relay of 911 calls to emergency personnel.⁹² We said that a satellite carrier, having national coverage and the responsibility to determine appropriate emergency personnel for its entire nationwide footprint, may experience more difficulty than a locally-deployed wireless carrier in determining which entity to send emergency calls in the absence of a PSAP.⁹³

30. Among those MSS carriers supporting a call center requirement, none support establishment of specific procedural requirements.⁹⁴ MSS carriers generally oppose any requirement that they assume responsibility for compiling PSAP databases, arguing that to do so would be a complex and costly task for which they lack adequate resources.⁹⁵ The Boulder Regional Emergency Telephone Service Authority (BRETSA) comments that call centers should transfer emergency calls to PSAPs over 911 trunks so that the PSAP computer workstations and full facilities can be utilized for analysis of ALI and ANI data.⁹⁶ BRETSA points out that a call center transfers a call to a PSAP over administrative phone lines, resulting in the loss of ANI/ALI data, and preventing the PSAP from transferring the call to another PSAP without the assistance of an intermediary operator.⁹⁷ BRETSA says that the Commission should require the routing of all emergency calls via 911 trunks (desiring ultimately an interstate E911 backbone network).⁹⁸

31. Discussion. Given that two carriers' call centers are already operating with apparent success, we see no reason to mandate specific procedural requirements, such as answering protocols, operator training, call center location, or multiple language requirements.⁹⁹ Rather, we will require only a few minimum functionalities, including: MSS carriers must ensure that call centers are accessed by dialing "911,"¹⁰⁰ call centers must ascertain the caller's phone number and location, and the call center must transfer or forward the call to an appropriate PSAP. We encourage MSS carriers to consult with entities such as APCO and NENA/NASNA in order to train operators to answer emergency calls. Since we are

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Fifth Report and Order at para. 15. The Commission's objective in establishing these procedures was to ensure 911 call completion.

⁹² *E911 Scope NPRM*, 17 FCC Rcd at 25585, para. 25.

⁹³ *E911 Scope NPRM*, 17 FCC Rcd at 25585, para. 25.

⁹⁴ See, e.g., MSV comments at 9; Globalstar comments 4-6; ICO comments at 7-8.

⁹⁵ MSV comments at 10; ICO comments at 8.

⁹⁶ BRETSA comments at 5.

⁹⁷ BRETSA comments at 6. MSV indicates that its call center identifies an appropriate PSAP and its ten-digit phone number in its database based on location information obtained from the 911 caller, then initiates a conference call between that PSAP and the caller. MSV comments at 4, 9. Traditional CMRS carriers forward calls to PSAPs by means of trunk lines, whereas call centers must use administrative lines that connect over the PSTN. See also ICO comments at 7 (marking that processing emergency calls with call centers is more manageable than E911 because calls to the PSAPs "would be handled as standard wireline calls over the PSTN").

⁹⁸ BRETSA comments at 6-7.

⁹⁹ Globalstar suggested that multiple language requirements would be expensive to implement, and asked that the Commission set limits (such as English and Spanish). (Globalstar comments at 4). We see no need to establish any foreign language requirements at this time for call centers serving domestic 911 calls.

¹⁰⁰ We do not agree with the Washington State E911 Program's (WSEP) argument that call centers are a form of customer service and thus should not be accessed by dialing 911. (WSEP comments at 3-4). The call center will be the MSS customer's means of obtaining emergency assistance. In implementing the Wireless 911 Act, the Commission designated "911 as the national emergency telephone number to be used for reporting emergencies and requesting emergency assistance." (Implementation of the 911 Act, WT Docket No. 00-110, The Use of N11 Codes and Other Abbreviated Dialing Arrangements, CC Docket No. 92-105, *Fourth Notice of Proposed Rulemaking and Notice of Proposed Rulemaking*, 15 FCC Rcd 17079 at para. 11 (2000)).

not requiring that MSS carriers transmit ANI and ALI at this time, we do not need to require that call centers use 911 trunks to route calls to PSAPs in an effort maintain enhanced data integrity, as BRETSA requests. Moreover, we are convinced that the cost of establishing trunks to the thousands of currently existing PSAPs is not justified given the relatively small subscriber bases and level of 911 traffic currently generated by MSS systems.¹⁰¹

32. We do not believe that MSS carriers should be required to compile PSAP databases, since several commercial alternatives exist. For example, MSV indicates that it uses a commercially available PSAP database, and NENA/NASNA says that NENA's national PSAP registry can be used by MSS carriers as a PSAP database.¹⁰² APCO notes that cellular carriers and telematics providers have compiled and maintained PSAP databases.¹⁰³ We also believe that MSS carriers can satisfy the Commission's requirements for the routing of 911 calls in the absence of a designated PSAP by using existing PSAP databases. Both Globalstar and MSV support this approach for MSS, provided that the contact information is clear and commercially available.¹⁰⁴ MSV says that its PSAP database includes information for sheriff offices and other non-PSAP emergency personnel.¹⁰⁵ We find this information particularly encouraging because it suggests that database preparers are already including contact information for non-traditional emergency personnel. While we asked in the *E911 Scope NPRM* whether MSS carriers should permit callers from coastal waterways to dial 911 to access the Coast Guard,¹⁰⁶ we will not make any such requirement at this time. Although NENA/NASNA and MSV support such a requirement,¹⁰⁷ we will not require specific call center procedures, consistent with our overall policy towards call centers.

33. Several commenters urge the Commission to take a leadership role in establishing and maintaining the continuing accuracy of a national PSAP database,¹⁰⁸ and although we are concerned about PSAP information accuracy,¹⁰⁹ we instead urge APCO, NENA, and other public safety entities to work closely with states to ensure that PSAP databases are complete and regularly updated. Also, we look forward to the dialog between the Wireless Telecommunications Bureau and state 911 designees concerning PSAP identification and contact information.¹¹⁰

c. Location Determination Technology

34. Background. We sought comment on whether an MSS system's inherent location determination capabilities should be used to obtain a 911 caller's location and whether that information should be automatically transmitted to the call center, if technically feasible. The availability of latitude

¹⁰¹ See Globalstar comments at 8, MSV comments at 21, ICO comments at 5.

¹⁰² MSV purchased a license to a PSAP database that is updated monthly and covers all 50 states, and has been used with success. MSV comments at 9-10; NENA/NASNA comments at 6.

¹⁰³ APCO comments at 7.

¹⁰⁴ MSV comments at 11; Globalstar comments at 6.

¹⁰⁵ MSV comments at 11.

¹⁰⁶ *E911 Scope NPRM*, 17 FCC Rcd 25576 at 25585, para. 25.

¹⁰⁷ NENA/NASNA comments at 15; MSV comments at 11.

¹⁰⁸ See MSV comments at 10; ICO comments at 8; Benton County comments at 2; AT&T reply at 4-5.

¹⁰⁹ See Benton County comments at 2 (noting that it found inaccurate information about Benton County PSAPs in several PSAP databases); see also Globalstar comments at 5 (noting that PSAP information for Puerto Rico and the Virgin Islands is not available).

¹¹⁰ See Final Agenda Announced for the October 29 and 30, 2003 Meeting of the Commission's Wireless E911 Coordination Initiative, *Public Notice*, DA 03-3388, rel. Oct. 23, 2003.

and longitude information can enhance the ability of a call center to match the correct PSAP, particularly when callers are lost or otherwise do not know where they are and cannot provide their location. As described above, callers using Globalstar can use their handsets to determine their approximate coordinates, then read this information to the emergency operator, who then uses it to ascertain the appropriate PSAP.¹¹¹ The Iridium system, while not currently providing emergency call assistance, is capable of determining the location of a caller within an accuracy of approximately 10 to 20 kilometers.¹¹² We sought comment on the benefit to be gained in requiring satellite systems that are capable of determining caller locations to automatically transmit that information to the call center, either as the 911 number is dialed or shortly after the connection is made to the call center, if additional time is necessary for the handset to see enough satellites to determine the location.

35. Discussion. We do not believe that any location determination technology requirements are warranted at this time. No MSS carriers can presently determine caller location accuracy with the precision demanded by Section 20.18 of the Commission's rules, and moreover, it is clear that MSS carriers differ from each other in their location determination capabilities.¹¹³ MSV asserts that its location information is of no use to a PSAP (five beams cover North America, and a single beams covers thousands of square miles).¹¹⁴ Inmarsat cannot locate callers with current generation equipment, claiming at best it can identify which beam is involved in the call.¹¹⁵ Globalstar opposes any requirement that location information be automatically relayed to a call center, saying the costs "would drive the cost of doing business beyond what is currently sustainable."¹¹⁶ We agree with ICO that MSS providers "should be permitted to use their inherent system capability" to determine caller location,¹¹⁷ and we encourage them to do so and forward that information to the call center automatically, if possible (particularly those carriers that intend to include Global Positioning System (GPS) in their systems). In fact, any efforts to automatically forward location and phone number information to the call center will make carriers better suited to transition to E911 deployment in the future.

2. Enhanced 911

36. Background. We noted in the *E911 Scope NPRM* that the record generated up to that point in the GMPCS and 2 GHz MSS proceedings illustrated a fundamental difference of opinion as to whether requiring E911 for MSS is appropriate at that time.¹¹⁸ Satellite licensees generally opposed adoption of a rule requiring E911 for MSS, claiming it to be premature and/or not economically and technically feasible, while public safety entities supported E911, claiming it is in the public's interest.¹¹⁹ We observed that if the technology and cost permit, consumer expectations and the public interest support a requirement that MSS provide E911 services comparable to those that terrestrial wireless service delivers.

¹¹¹ See also Globalstar comments at 6-7.

¹¹² Feb. 22 *Ex Parte Memo* at 3. As a big LEO licensee, Iridium is required to be capable of locating the position of users of mobile transceivers in an effort to prevent interference with the radio astronomy service. See 47 C.F.R. § 25.213.

¹¹³ For network-based technologies, we require Phase II location accuracy to be within 100 meters for 67 percent of calls and 300 meters for 95 percent of calls. For handset-based technologies, we require Phase II location accuracy to be within 50 meters for 67 percent of calls and 150 meters for 95 percent of calls. See 47 C.F.R. § 20.18(h).

¹¹⁴ MSV comments at 12.

¹¹⁵ Inmarsat comments at 8.

¹¹⁶ Globalstar comments at 4.

¹¹⁷ ICO comments at 7.

¹¹⁸ *E911 Scope NPRM*, 17 FCC Rcd at 22587-88, para. 28.

¹¹⁹ *E911 Scope NPRM*, 17 FCC Rcd at 25587-88, para. 28 and n.85.

Acknowledging that the record thus far demonstrated that E911 requirements for satellite systems may be premature, we sought new and updated information to develop further the record for eventual adoption of MSS enhanced 911. Therefore, we asked for comment regarding whether MSS network technology has improved in any significant way since comments were last filed on these issues, in early 2001. We also sought information relevant to comparing E911 in the MSS and terrestrial wireless contexts, including with respect to the two phases in which we required terrestrial wireless carriers to implement enhanced 911 (the first phase consisting of ANI and second phase consisting of ALI).¹²⁰ We sought comment on appropriate implementation schedules for MSS E911, including whether E911 compliance should be triggered when a licensee has achieved a certain benchmark in subscribership (as a means of cost-spreading).¹²¹ At the time we adopted the *E911 Scope NPRM*, we had not yet made a decision in our MSS ancillary terrestrial component (ATC) proceeding (IB Docket No. 01-185). However, we did request comment about basic and enhanced 911 compliance in the event we were to permit satellite carriers to offer an ancillary terrestrial component to their satellite service.¹²²

37. Discussion. We intend to eventually require MSS carriers to comply with our E911 requirements, but we do not find sufficient basis in the record to require immediate compliance. Public safety entities and the terrestrial wireless community argue that MSS carriers should be subject to the same E911 requirements as terrestrial CMRS.¹²³ MSS providers continue to oppose any extension of these requirements to their service, chiefly citing expense and technical difficulty as reasons.¹²⁴ We are encouraged by MSV's comments that next generation satellite systems might be capable of implementing E911,¹²⁵ but we do not believe we have sufficient information to establish reasonable implementation schedules. We intend to eventually apply enhanced 911 requirements to those MSS entities that will be subject to the call center rule. We do not agree with AT&T Wireless's argument that "[t]here is no evidence in the record . . . of administrative problems or technical difficulties that are significantly distinct from those faced by nationwide CMRS providers with respect to 911."¹²⁶ To the contrary, we find that the record does show significant differences between MSS and nationwide CMRS providers with respect to 911. Although a nationwide CMRS provider and an MSS provider both may have a nationwide footprint, the CMRS provider has local PSTN interconnection points throughout its network, whereas the MSS provider interconnects through only a small number, or a single, gateway station.¹²⁷ Thus, CMRS carriers have the benefit of access to 911 selective routers throughout their networks while MSS carriers do not. We recognize that the cost of establishing 911 trunks between gateway stations and

¹²⁰ *E911 Scope NPRM*, 17 FCC Rcd at 25590-94, paras. 33-41.

¹²¹ *E911 Scope NPRM*, 17 FCC Rcd at 25594, paras. 42-43.

¹²² *E911 Scope NPRM*, 17 FCC Rcd at 25598-99, para. 55.

¹²³ See NENA/NASNA comments at 7; BRETSA comments at 3; WSEP comments at 4; AT&T Wireless comments generally; Sprint comments at 1-4; CTIA comments at 5.

¹²⁴ See, e.g., MSV comments at 17-18 (commenting that whereas MSS user equipment is expensive and can be as large as a laptop computer and with service charges of a dollar per minute, terrestrial wireless equipment can fit in a pocket, frequently free, and airtime costs "Are often less than a tenth of those assessed to MSS customers."); Globalstar comments at 8-10 (citing a \$1 million cost for new switching equipment at gateway); ICO comments at 5-6 (stating that to transmit ALI and ANI to PSAPs, either switches throughout the PSTN (and beyond MSS carrier control) would need modification, or gateways would require "dedicated lines. . . to each. . . of the 10,000-plus PSAPs in the U.S."); Globalstar comments at 9 (asserting that, with regard to the use of GPS to provide ALI, MSS providers in the 1610-1626.5 MHz band may experience interference with GPS receive band in 1574-1577 MHz).

¹²⁵ MSV comments at 18-21.

¹²⁶ AT&T Wireless comments at 4.

¹²⁷ See, e.g., Globalstar comments at 7 ("[u]nlike locally-deployed fixed cellular and PCS base stations, which generally provide the carrier's switch with sufficient data to ensure reliable call routing, MSS carriers have no fixed point of presence near a caller's location"); ICO comments at 5-6.

all PSAPs throughout the nation would be substantial.¹²⁸ The record also shows that the MSS industry as a whole has many fewer subscribers than traditional CMRS, complicating the ability of MSS carriers to spread the cost of E911 upgrades.¹²⁹

38. Clearly, the MSS industry faces a number of unique network interconnection issues, and MSS providers differ from each other in terms of service provided and technologies used.¹³⁰ The record suggests that thus far in the development of MSS, the public safety community and the MSS industry have not engaged in direct interaction that might lead to workable basic and enhanced 911 solutions. This contrasts with the 1996 Consensus Agreement through which representatives from the wireless industry and public safety community reached agreement on a number of wireless E911 matters, including implementation of E911 in two phases (ANI and ALI).¹³¹ We believe that active communication between MSS providers, public safety entities, and local exchange carriers will benefit the development of E911 solutions and provide the roadmap for a reasonable implementation schedule.¹³² Therefore, we direct the rechartered Network Reliability and Interoperability Council ("NRIC") to study a number of issues pertaining to MSS E911 deployment.¹³³ We will include MSS issues in the NRIC's charter with the expectation that relevant parties will develop recommendations for E911 deployment that we will release for comment in a future further notice of proposed rulemaking.¹³⁴ In addition to those issues mentioned

¹²⁸ See, e.g., Globalstar comments at 7 ("[e]stablishing hundreds or thousands of PSAP trunk-line connections . . . would be cost prohibitive").

¹²⁹ See Globalstar comments at 3, MSV comments at 17, Stratos comments at 5-6.; ICO comments at 9. See also CTIA's Semi-Annual Wireless Industry Survey, http://www.wow-com.com/pdf/MidYear_2003_survey.pdf, visited November 6, 2003 (indicating that as of June 2003, CTIA estimated a total of 148,065,824 wireless subscribers in the U.S.). While statistics concerning MSS industry subscriber numbers are not available, anecdotal evidence suggests that domestic MSS subscribers number in the hundreds of thousands. See, e.g., *E911 Scope NPRM*, 17 FCC Rcd at 25594, para. 43; Stratos comments at 5; Globalstar Reports Results for Second Quarter 2003, *Press Release*, http://www.globalstar.com/view_pr.jsp?id=342, visited November 7, 2003 (indicating that Globalstar had approximately 93,000 subscribers worldwide as of June 30, 2003).

¹³⁰ See, e.g., Inmarsat comments at 3 (noting that maritime and aeronautical terminals are mounted on ships and planes while terrestrial terminals are the size of laptop computers and cannot be used while in motion unless they provide data-only service); MSV comments at 3 (indicating that MSV, an L-band licensee, provides voice and data MSS and a "push-to-talk" dispatch-type service); Globalstar comments at (i), 1-2 (noting that Globalstar uses a constellation of 1.6/2.4 GHz band nongeostationary satellites to provide two-way voice service interconnected to the PSTN). Globalstar can use its satellites to triangulate caller location (Globalstar comments at (i)), whereas MSV and Inmarsat can, at best, only identify which satellite beam is being used for a given call, and a beam can cover thousands of square miles. MSV comments at 12; Inmarsat comments at 8.

¹³¹ *Wireless E911 First Report and Order* at paras. 22-23. The Commission sought comment on the Consensus Agreement and ultimately incorporated some of its principles into the final E911 rules.

¹³² See also MSV comments at 19 (recommending the formation of a "broad-based, cross-industry effort" to determine E911 solutions for MSS).

¹³³ The chartering of the NRIC is a separate process, outside of this proceeding. Our proposal for the NRIC is subject to approval by the Administrator of the General Services Administration. See 41 C.F.R. §§ 105-54.201—105-54.202.

¹³⁴ The Commission has in the past directed the NRIC to study other issues and make recommendations. See, e.g., *Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 98-147, 96-98, *Third Report and Order and Fourth Report and Order*, 14 FCC Rcd 20912, 20992-93 (1999) (requesting that NRIC V provide the Commission with initial recommendations for resolution of spectrum compatibility and management issues within 150 days from the date of NRIC V's establishment).

elsewhere in this Report and Order,¹³⁵ we anticipate that the NRIC will study:

- the feasibility of short-term E911 architecture changes to 911 networks and to mobile satellite networks so that PSAPs can obtain the calling number and location information on satellite E911 calls;
- technical considerations associated with using GPS to provide location information for MSS calls;
- incorporating MSS E911 issues into architecture discussions and implementation plans, including the timing of the availability of technologies for providing number and location information.

39. We look forward to reviewing the NRIC's recommendations for we believe that E911 will be possible, both operationally and technically, for MSS carriers in the near future. For example, Iridium noted that it has the capability to forward a caller phone number to a statewide emergency default point (although this is not something we currently require).¹³⁶ As MSV commented, next generation satellite systems may be ready, technologically and economically, to comply with E911, provided the "requirements are clear and reasonable, uniformly applied. . . , and established before it is too late to retrofit operational systems."¹³⁷ We believe that the NRIC recommendations will assist us in establishing requirements that can be incorporated into next generation systems, if not sooner.¹³⁸

3. International Issues

40. Background. We observed in the *E911 Scope NPRM* that rules requiring satellite carriers to provide emergency call centers and E911 services raise international issues, including the use of different emergency access codes across the globe¹³⁹ and differing standards for the transmission and routing of enhanced call information.¹⁴⁰ When the Commission initially declined to require MSS licensees to comply with any 911 rules, it identified the need to coordinate with international standards bodies for completion of international calls as one of the several factors distinguishing MSS from covered CMRS carriers.¹⁴¹ In the *Satellite 911 Public Notice*, the International Bureau asked if the public safety community and MSS industry participants had done anything "to continue their efforts to develop and establish standards [for emergency calling] along with the international standards bodies."¹⁴² The comments received in response to this inquiry did not differ substantially from the comments received nearly a year and half earlier in response to the *GMPCS NPRM*. In both cases, commenters stressed the need to develop standards on the international stage prior to adoption of any E911 rules, but did not

¹³⁵ See para. 62 (discussion of multi-line telephone systems) and Section V(A) *infra* (discussion of ancillary terrestrial component issues).

¹³⁶ Iridium reply at 5.

¹³⁷ MSV comments at (ii).

¹³⁸ See, e.g., Colorado Task Force comments at 5; BRETSA comments at 3; NENA/NASNA reply at 1-2.

¹³⁹ By way of example, the emergency dial code for many European countries is 112; Argentina uses 101 for ambulance and police and 107 for fire; Brazil uses 192 for ambulance, 190 for police, and 193 for fire; China uses 120 for ambulance, 110 for police, and 119 for fire; Japan uses 119 for ambulance and fire and 110 for police. See <http://www.globaltelecom.org/telecom.htm> (visited Sept. 23, 2003).

¹⁴⁰ *E911 Scope NPRM*, 17 FCC Rcd at 25596, para. 49.

¹⁴¹ *E911 First Report and Order*, 11 FCC Rcd at 18718, para. 83.

¹⁴² *Satellite 911 Public Notice*, 16 FCC Rcd at 3786, citing *Wireless E911 First Recon Order*, 12 FCC Rcd at 22708, para. 89.

indicate whether any progress had been made in this regard.¹⁴³ We asked in the *E911 Scope NPRM* whether resolution of international standards issues should in any way further delay adoption of a call center requirement or E911 rules¹⁴⁴ and received little information in response. MSV says that the Commission should make any call center and 911 requirements apply only to U.S. customers and argues that applicability to international roamers (including issues pertaining to international emergency dial codes) is better addressed in an international forum.¹⁴⁵ Globalstar believes that a universal standard is desirable, but the more flexible the U.S. standard is, the more likely it will be compatible with a subsequent international one.¹⁴⁶

41. Discussion. The record does not show that any progress has been made with regard to development of international standards for MSS emergency calling. We understand that to date no recommendation has resulted from emergency services ITU Study Group 8 question ITU-R 227/8.¹⁴⁷ Several years have elapsed since the Commission first indicated that international standards should be addressed in order to facilitate development of 911 service for MSS. We believe that MSS would benefit from that pursuit of international standards, but we no longer see resolution of these issues as an impediment to requiring domestic compliance with 911 rules. Interested parties have had ample opportunity to begin the international standards review process but have apparently failed to do so. We see no reason to further delay implementation of emergency service rules for MSS, particularly when call centers are technically and operationally feasible now. We strongly encourage all licensees, equipment manufacturers, public safety organizations, and any other interested parties to participate in the discussion of ITU-R Question 227/8.

42. As we indicated above, at this time we are not requiring MSS carriers to recognize emergency dial codes other than 911. Therefore, MSS carriers would be under no obligation to recognize emergency calls from international roamers who dial non-911 codes for aid. However, to the extent that an MSS carrier providing U.S. service permits international customers to roam on the domestic network, any 911 calls placed by the roamers must not be blocked. We see no technical or policy reason why a carrier should not answer all 911 emergency calls that are placed over its network. We will monitor the progress of the development of international standards for MSS emergency access service and revisit our policy concerning international roamers if necessary.

4. Other Issues

43. Carrier Liability. Some carriers express concern about their potential liability in offering emergency services. ICO and Globalstar want the Commission to ensure that MSS carriers have the same protection from liability as other providers of 911 service.¹⁴⁸ Inmarsat expresses concern that the 911 Act did not contemplate MSS, and suggests that Congress must take action to protect MSS carriers before any

¹⁴³ See, e.g., Iridium LLC *GMPCS NPRM* reply at 14; ICO Global *GMPCS NPRM* comment at 6-7; SIA *GMPCS NPRM* reply at 2; Ministry of Posts and Telecommunications of Japan *GMPCS NPRM* comment at 1. comment in response to the *Satellite 911 Public Notice* on this issue was similar. See, e.g., ICO *Satellite 911 Public Notice* comments at 8; Inmarsat *Satellite 911 Public Notice* comments at 2.

¹⁴⁴ *E911 Scope NPRM*, 17 FCC Rcd at 25597, para. 50.

¹⁴⁵ MSV reply at 13.

¹⁴⁶ Globalstar comments at 12.

¹⁴⁷ This question addresses a number of issues critical to global implementation of emergency services, including the preferred capabilities of MSS systems, preferred requirements for automatic location determination, aspects of routing MSS emergency calls that must be compatible with international routing procedure, and the enhanced information to be forwarded with emergency calls.

¹⁴⁸ Globalstar comments at 4-5; ICO reply at 4.

911 requirements are imposed.¹⁴⁹ Inmarsat also suggests that carriers providing emergency services with access codes other than "911" may not be protected under the 911 Act.¹⁵⁰

44. Discussion. We believe that MSS carrier concerns about liability protection are moot by virtue of our requirement that they use the 911 dial code for call center access.¹⁵¹ The 911 Act provides that a wireless carrier providing "wireless 9-1-1 service" (i.e., "any 9-1-1 service provided by a wireless carrier, including enhanced wireless 9-1-1 service") "shall have immunity or other protection from liability in a State of a scope and extent that is not less than the scope and extent of . . . protection from liability that any local exchange company" has under Federal and State law.¹⁵² Inmarsat's concern that MSS was not contemplated in the 911 Act is unfounded, since the Act defines "wireless carrier" so broadly (i.e., a wireless carrier is "a provider of commercial mobile services or any other radio communications service that the Federal Communications Commission requires to provide wireless 9-1-1 service").¹⁵³ Thus, MSS providers have the same protection from liability as other carriers.¹⁵⁴ While we require that MSS providers permit customers to access call centers by dialing 911, use of any other emergency access codes, such as 112 used by many European countries, will be at the provider's discretion. We do not believe that use of other emergency access codes will affect MSS carriers' liability protection, provided that the carrier recognizes "911."

45. Non-initialized handsets. The *E911 Scope NPRM* sought additional information concerning other issues that the International Bureau had raised in the *Satellite 911 Public Notice*,¹⁵⁵ including applicability of 911 rules to non-initialized MSS handsets.¹⁵⁶ We sought comment on Globalstar's assertion that it cannot route calls from non-initialized phones because they lack "an identifiable international mobile subscriber identity."¹⁵⁷ Continuing to oppose any requirements for non-initialized phones, Globalstar says that it cannot complete emergency calls from non-service initialized handsets without "significant technical development for gateway capabilities" because such handsets "would require support for Electronic Serial Number ("ESN") addressing. . . ."¹⁵⁸ MSV also opposes requirements for non-initialized handsets, noting that its system is also "currently unable to identify non-service initialized handsets absent significant costs."¹⁵⁹ Conversely, AT&T Wireless Services, Inc. argues that MSS should comply with the same basic and enhanced 911 rules as other services, including non-

¹⁴⁹ Inmarsat comments at 9.

¹⁵⁰ Inmarsat comments at 9.

¹⁵¹ Pursuant to the 911 Act, the Commission designated 911 as the number to be used throughout the nation for accessing emergency service. See Implementation of 911 Act, WT Docket No. 00-110; The Use of N11 Codes and Other Abbreviated Dialing Arrangements, CC Docket No. 92-105, *Fourth Report and Order and Third Notice of Proposed Rulemaking, Notice of Proposed Rulemaking*, 15 FCC Rcd 17079 (2000).

¹⁵² Wireless Communications and Public Safety Act of 1999, Pub. L. 106-81, enacted Oct. 26, 1999, 113 Stat. 1286, amending the Communications Act of 1934, §§ 222, 251 (911 Act).

¹⁵³ *Id.*

¹⁵⁴ MSS carriers will also have the benefit of the same liability protection as terrestrial CMRS when E911 requirements for MSS eventually become effective.

¹⁵⁵ See *Satellite 911 Public Notice*, 16 FCC Rcd at 3785-86.

¹⁵⁶ *E911 Scope NPRM*, 17 FCC Rcd at 25599, para. 56. Non-service-initialized wireless handsets (non-initialized handsets) are phones that are not registered for service with any Commercial Mobile Radio Service (CMRS) carrier. Because carriers generally assign a dialable number to a handset only when a customer enters into a service contract, a non-initialized handset lacks a dialable number.

¹⁵⁷ *E911 Scope NPRM*, 17 FCC Rcd at 25599, para. 56.

¹⁵⁸ Globalstar comments at 15.

¹⁵⁹ MSV reply at 13.

initialized phone requirements.¹⁶⁰

46. Discussion. We will not require non-initialized MSS handsets to be 911-accessible at this time. The effort required to upgrade the gateways is not justified considering the small numbers of MSS customers, compared to traditional CMRS.¹⁶¹ Moreover, we believe that non-initialized MSS handsets are not as likely as traditional CMRS handsets to be in the stream of commerce because of the relatively high cost and smaller customer base.¹⁶² We will revisit this issue should MSS subscriber levels rise or the handset costs come down significantly, or both.

47. Consumer issues. We observed in the *E911 Scope NPRM* that information about consumer expectations for the emergency call features of satellite phones could help us craft rules.¹⁶³ We invited comment concerning measures that carriers may take, such as labeling, to communicate emergency access features to subscribers.¹⁶⁴ MSV opposes any requirement that existing terminals be recalled for labeling purposes because of the cost and inconvenience to customers.¹⁶⁵ MSV and Globalstar inform their customers about their call centers in customer service agreements and service manuals.¹⁶⁶ Benton County argues that satellite carriers should affix labels on handsets that provide information about 911 capabilities.¹⁶⁷

48. Discussion. As we mentioned above, the Commission required that any handset used for 2 GHz MSS that does not have access to basic 911 or E911 clearly indicate the lack of these functions with a label or sticker affixed to the handsets.¹⁶⁸ This labeling requirement remains in effect until the Commission adopts an order concerning 911 rules in IB Docket No. 99-67. In establishing that labeling requirement, the Commission was concerned that consumers may have difficulty distinguishing between terrestrial CMRS handsets subject to basic and enhanced 911 requirements and satellite handsets that were not subject to any 911 requirements. Thus, the Commission concluded that consumers likely would expect 911 services to be available whether on the terrestrial network or roaming on the satellite network, and consequently required that GHz MSS carriers inform consumers of the *absence* of emergency service by means of a label on the handset.¹⁶⁹ We do not believe a label is necessary to communicate call center features and/or limitations. Rather, MSS carriers are strongly encouraged to communicate call center features and location identification limitations to customers via marketing material and customer service agreements.

¹⁶⁰ AT&T Wireless comments at 4.

¹⁶¹ See, e.g., Washington State E911 Program (WSEP) comments at 6 (stating that no 911 requirements are necessary for non-initialized MSS handsets).

¹⁶² According to Globalstar, "there are at most a few hundred thousand MSS subscribers total in the United States." (emphasis omitted). Globalstar comments at 14. Iridium says that compared to terrestrial handsets, "[t]here is a much smaller volume of MSS handsets in circulation, and the prices of those handsets were far greater than today's or even yesterday's cellular and PCS handsets"). Iridium reply at 6.

¹⁶³ *E911 Scope NPRM*, 17 FCC Rcd at 25599, para. 56.

¹⁶⁴ *Id.*

¹⁶⁵ MSV comments at 23.

¹⁶⁶ MSV comments at 23; Globalstar comments at 16.

¹⁶⁷ Benton County comments at 3.

¹⁶⁸ See *supra* note 20.

¹⁶⁹ *2 GHz Report and Order*, 15 FCC Rcd 16127, 16185, para. 126.

B. Multi-Line Telephone Systems

1. Background

49. In this section, the Commission addresses issues raised in the *E911 Scope NPRM* regarding the ability of multi-line telephone systems (MLTS)¹⁷⁰ to provide accurate call-back and location information for enhanced 911 (E911) calls originating from locations served by such systems. In the *E911 Scope NPRM*, the Commission referred to its previous actions regarding MLTS/E911 compatibility, particularly the *1994 Notice*,¹⁷¹ and discussed the unique technical factors associated with MLTS provision of E911.¹⁷² The Commission also discussed actions taken by states to require MLTS E911 compatibility, and sought comment on whether state action had been adequate, and if not, whether it would be appropriate for the Commission to adopt rules to require MLTS E911 compatibility.¹⁷³ In this context, the Commission also requested comment on the Model Legislation proposed by NENA and APCO, as well as the draft consensus proposal put forth by the "E911 Consensus Group."¹⁷⁴ The Commission also sought comment on whether there are any workplace safety regulations of other agencies, state or federal, that should affect our consideration of access to 911 from multi-line systems.¹⁷⁵

50. The Commission is concerned that the lack of effective implementation of MLTS E911 could be an unacceptable gap in the emergency call system, and could have a deleterious effect on our homeland security system. The delivery of accurate location and call-back information is vital for emergency response service to be effective and is clearly in the public interest.¹⁷⁶ Nonetheless, the record demonstrates that, because of the particular requirements of E911 over MLTS, state and local governments are in a better position to devise rules to ensure that E911 is effectively deployed over MLTS in their jurisdictions. As we discuss in detail below, the rules proposed by commenters in this proceeding appear to be either too ambiguous to be useful, or would impose technical requirements on carriers, MLTS manufacturers, and MLTS operators¹⁷⁷ that could stifle technological innovation and may

¹⁷⁰ In this Order, we use the terms "MLTS" or "multi-line system" to describe a private branch exchange (PBX), a Centrex telephone system, a key telephone system, and a hybrid telephone system.

¹⁷¹ *Revisions of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, Notice of Proposed Rulemaking, 9 FCC Rcd 6170 (1994) (*1994 Notice*). In the *1994 Notice*, the Commission sought comment on rules that would require certain mobile wireless licensees to ensure that their networks included features that would make enhanced 911 service available to their subscribers. *Id.* In addition, the Commission sought comment on amending its Part 68 rules to ensure compatibility of PBXs and other dispersed multi-line telephone systems with enhanced 911 services. *Id.*, para. 1. Although the Commission has issued a number of decisions dealing with wireless E911, it has deferred decision on whether to require E911 compatibility by multi-line systems. *E911 Scope NPRM*, 17 FCC Rcd at 25578-79, 25605-06, paras. 5, 83.

¹⁷² *E911 Scope NPRM*, 17 FCC Rcd at 25607, para. 86.

¹⁷³ *E911 Scope NPRM*, 17 FCC Rcd at 25605, para. 81. In the *E911 Scope NPRM*, we requested comment on whether wireline, wireless, or Internet Protocol-based MLTS should be E911 compatible. *Id.*

¹⁷⁴ *E911 Scope NPRM*, 17 FCC Rcd at 25607, para. 87. The E911 Consensus Group consisted of representatives from the National Emergency Number Association (NENA), Association of Public Safety Communications Officials - International, Inc. (APCO), National Association of State 9-1-1 Administrators, Ad Hoc Telecommunications Users Committee, and MultiMedia Telecommunications Association.

¹⁷⁵ *Id.*

¹⁷⁶ See also Ad Hoc comments at 6 ("In this proceeding, the Commission has correctly underscored the important public interest served by expanding access to E911 services and the delivery of accurate location information and callback numbers to local emergency services personnel.").

¹⁷⁷ MLTS operators are the owners and operators of multi-line systems, such as businesses, hospitals, and universities.

be overly burdensome. We find that under these circumstances, adopting national rules governing MLTS E911 compatibility would impose unnecessary regulatory burdens inconsistent with the pro-competitive, deregulatory goals of the Telecommunications Act of 1996.¹⁷⁸ We applaud those states that have passed legislation to require MLTS implementation of E911. For those states that have not passed legislation to require MLTS operators to supply E911 functionality to the end users of their systems, we believe that the Model Legislation submitted by NENA and APCO offers the states a valuable blueprint for their own laws.¹⁷⁹ The Commission expects states to act expeditiously in this area, and will release a public notice in a year to examine the progress states have made in implementing MLTS E911 compatibility. In addition, we adopt a *Second Further Notice of Proposed Rulemaking* to consider whether federal regulation may be necessary should states fail to act.¹⁸⁰

2. Discussion

51. Application of E911 Criteria. We begin our analysis by looking at the four criteria, referenced in paragraph 5 above, whereby the Commission considered whether certain wireless licensees should be required to implement E911 service.¹⁸¹ Based on the record before us, we conclude that MLTS satisfy the first criterion because they interconnect to the public switched network, and offer real-time, two-way switched voice service. Regarding the second criterion, it is not entirely apparent from the record whether end-users of telephones served by MLTS always have a clear expectation of access to 911 and E911. We agree that consumers generally expect that 911 or E911 would work from the telephone at a particular location, and that a consumer using MLTS would have the same expectation of having access to E911 service as would any other caller.¹⁸² Based on the record, we conclude that MLTS callers generally expect to have access to E911.¹⁸³

52. The record contains little evidence regarding the third criterion – whether MLTS compete with CMRS or wireline local exchange services. Accordingly, we seek additional comment in the *Second Further Notice of Proposed Rulemaking* on the application of the criteria. We note, however, that in most cases MLTS are operated by private entities that do not compete with CMRS or wireline local exchange services, although we believe that many entities employ MLTS as a substitute for CMRS or wireline local exchange service. Finally, regarding the fourth criterion, although a coordinated overall plan is needed to determine technical standards and other requirements for all parties involved in making E911 for MLTS work in any particular case, a “one size fits all” plan does not appear to be appropriate. As we discuss below, although technical solutions are available, effective deployment of E911 from MLTS requires technical coordination among the MLTS manufacturer, the local exchange carrier, the PSAP, and the

¹⁷⁸ We emphasize, however, that we do believe that MLTS E911 implementation should be examined at the state and local level, where legislators have the benefits of their police power, and insight into local emergency needs and capabilities.

¹⁷⁹ See MLTS Proposal of NENA and APCO, CC Docket No. 94-102 (filed July 24, 2001) (“Model Legislation”), Exhibit C. Further, although we strongly support the approach taken in the Model Legislation, we decline to revise our Part 64 or Part 68 rules at this time.

¹⁸⁰ See *Second Further Notice of Proposed Rulemaking*, *infra*.

¹⁸¹ *E911 First Report and Order*, 11 FCC Rcd at 18716-18, paras. 80-84.

¹⁸² Intrado comments at 11 (“There is a reasonable expectation on the part of the public that emergency response is available when dialing from a PBX or MLTS system.”); Colorado Task Force reply at 2 (“Customers expect to dial a 9-1-1 call from a PBX phone and a wireline phone in exactly the same way, and they expect that the same information (i.e., a distinctive callback number and location identification) will be relayed to the PSAP.”). See also Colorado Task Force comments at 5. However, we note that at least one commenter suggests that MLTS operators may have informed end users that E911 will not work from their location and that another alternative exists for an emergency, such as an emergency call center. See Southern Company reply at 4.

¹⁸³ Although, as noted in n.182 *supra*, there may be some instances where this may not be true.

MLTS operator. There are various equally effective technical solutions to MLTS E911 provisioning, any one of which may be appropriate for a particular locality. We do not believe that applying any one specific criteria is dispositive, but do believe that the level of specific information regarding local network deployment and customer expectation required to apply the second and fourth criteria supports a decision to rely on the states to decide what level of MLTS implementation is appropriate.

53. Adequacy of State Action. In the *E911 Scope NPRM*, we requested comment as to whether state action regarding MLTS E911 deployment had been adequate.¹⁸⁴ Based on the record, we determine that, although many states have not yet taken action to require MLTS to supply E911, states are in the best position to establish what steps to take to promote E911 availability, and agree with the commenters that the local nature of 911 implementation supports giving states broad discretion to adopt rules requiring MLTS to implement E911.¹⁸⁵ Accordingly, although we do not adopt national rules at this time, we expect that states will take appropriate steps to ensure MLTS E911 deployment in their jurisdictions. To the extent that states have not implemented rules requiring MLTS to implement E911, we believe the NENA Model Legislation offers states a valuable template for such rules and strongly encourage states to consider MLTS implementation of E911 in their jurisdictions. If states do not act to fill these gaps in implementation, we may reconsider our decision not to implement national rules in this area.¹⁸⁶

54. We decide not to adopt rules at this time because we believe the unique needs and circumstances of various residential and business MLTS may be better addressed by the states.¹⁸⁷ Congress, in *The Wireless Communication and Public Safety Act of 1999*, recognized the role that the states play when it required the Commission to "encourage and support efforts by States to deploy comprehensive end-to-end emergency communications infrastructure and programs, based on coordinated statewide plans. ..." ¹⁸⁸ The states have broad powers to adopt requirements regarding E911.¹⁸⁹ In particular, state legislatures may pass legislation in order to avail themselves of their police power (as well as other applicable powers) if they determine such powers are necessary to reach all affected parties. There appears to be little question that states have jurisdiction over operators of MLTS and could use their police powers to place requirements upon them.¹⁹⁰ Thus, we expect that states will adopt rules requiring MLTS E911 implementation. As noted above, and in the *Second Further Notice of Proposed Rulemaking*, we are prepared to act at the federal level, should states fail to do so.

¹⁸⁴ *E911 Scope NPRM*, 17 FCC Rcd at 25607, para. 87.

¹⁸⁵ NENA and NASNA comments at 13. See also Ad Hoc comments at 12 (arguing that the state agencies are in a "better position to determine what capabilities local emergency services providers currently have in place to use transmitted information prior to imposing requirements that such information be transmitted from workplaces" and that "[such] determinations are critically important to avoid the imposition of costly regulations that may not produce commensurate benefits").

¹⁸⁶ See *Second Further Notice of Proposed Rulemaking*, *infra*.

¹⁸⁷ See, i.e., ACUTA comments at 1-5 ("higher education institutions have developed various methods of processing 911 calls, utilizing the capabilities of their equipment and the services that they are able to obtain from telecommunications service providers"); Ad Hoc comments at 11 ("Ad Hoc cautions the Commission against attempting to regulate multi-line telephone systems in a manner that purports to apply equally to all workplaces; such regulations may not adequately consider the unique emergency notification requirements of particular places of employment."). See also UTC comments at 2-4; Southern Company reply at 2-4.

¹⁸⁸ See *911 Act*.

¹⁸⁹ The state of Illinois, has passed a law which regulates, among other things, operators of MLTS. See 50 Ill. Comp. Stat. § 750.

¹⁹⁰ See, i.e., Ad HOC comments at 1-13. But see Colorado Task Force comments at 6 ("The FCC has jurisdiction ... to require, by a specific date, MLTS operators to meet the same E9-1-1 requirements as wireline and wireless phones.").

55. Further, the present record contains no evidence that convinces us that effective deployment of E911 from MLTS would achieve greater benefit from federal rules than state rules. Since 1994, technical advances have taken place regarding MLTS E911 deployment,¹⁹¹ and various states have undertaken E911 initiatives.¹⁹² Again, the unique needs and circumstances of various residential and business MLTS users lead us to the conclusion that greater benefit may be derived from state-level action.¹⁹³ Further, a number of commenters support specific proposals regarding E911 compatibility (*i.e.*, grandfathering,¹⁹⁴ attendant notification, etc.). It is exactly this type of issue that we believe is best left to the competent decision-making of the states and localities.

56. We disagree with those commenters that urge the Commission to preempt state regulation.¹⁹⁵ We find preemption, at this time, to be unnecessary and contrary to the public interest. We are unwilling to substitute our judgment for the judgment of states that have enacted or may enact laws or regulations tailored to meet specific circumstances in their jurisdictions where there is no clear conflict with federal law or frustration of federal policy. We agree with NENA and NASNA that should future state regulations inhibit the development of E911 compatible MLTS or make compliance difficult or impossible on a broad scale, we can take appropriate action or entertain preemption petitions.¹⁹⁶ The record indicates that this is not the situation at this time.

57. Model Legislation. We solicited comment on whether the Model Legislation proffered by NENA and APCO offered a model for the states to adopt.¹⁹⁷ The Commission further solicited comment on the portion of the Model Legislation that would have the Commission modify portions of its Part 64 rule to require E911 trunking capability for carriers and its Part 68 rules to require E911 compatibility from MLTS manufacturers.¹⁹⁸

¹⁹¹ See Net2Phone reply at 1-11 (discussing VoIP technologies). See also Letter from Franklin Rademacher, Vice President and COO, RedSky Technologies, to Marlene Dortch, Secretary, Federal Communications Commission, CC Docket No. 94-102, (dated Sept. 17, 2003) (RedSky Sept. 17 *Ex Parte* Letter).

¹⁹² See <http://www.nena.org/9-1-1TechStandards/state.htm> for a list of state E911 legislation (visited Oct. 1, 2003).

¹⁹³ See, *i.e.*, ACUTA comments at 1-5 ("higher education institutions have developed various methods of processing 911 calls, utilizing the capabilities of their equipment and the services that they are able to obtain from telecommunications service providers"); Ad Hoc comments at 11 ("Ad Hoc cautions the Commission against attempting to regulate multi-line telephone systems in a manner that purports to apply equally to all workplaces; such regulations may not adequately consider the unique emergency notification requirements of particular places of employment."). See also UTC comments at 2-4; Southern Company reply at 2-4.

¹⁹⁴ We note that the topic of grandfathering old equipment raises numerous proposals as to which types of equipment should be grandfathered, or which entities, or for how long. See, *e.g.*, ACUTA comments at 6 (proposing grandfathering of older PBX equipment and a longer phase-in period for non-profit organizations and small organizations); Avaya comments at 4 (supporting implementation schedule and grandfathering proposed in the Model Legislation). See also UTC comments at 8; Southern Company reply at 6.

¹⁹⁵ See Avaya comments at 2-4; TIA comments at 3; Avaya reply at 4; NEC reply at 1-4.

¹⁹⁶ See NENA and NASNA comments at 13 ("Should state actions range so far beyond whatever the FCC does here as to interfere with federal purposes, there will be time enough to consider whether federal regulation should preempt the states."). See also TIA reply at 5.

¹⁹⁷ *E911 Scope NPRM*, 17 FCC Rcd at 25607-08, para. 88. See *NENA Technical Information Document on Model Legislation: Enhanced E-911 Multi-line Telephone Systems*, available at <http://www.nena.org> (visited October 2, 2002) (*Model Legislation*).

¹⁹⁸ In an effort to resolve differences regarding MLTS E911 compatibility issues, NENA, APCO, NASNA, Ad Hoc, and MMTA met on their own initiative and developed an *ex parte* presentation "Public Safety-MLTS Industry Consensus" (Consensus Proposal), that they filed with the Commission on April 1, 1997. Although it addresses other matters, the Consensus Proposal focuses principally on whether each station of a MLTS must be automatically

(continued....)

58. NENA and APCO proposed model legislation that would allow states to adopt many of the standards and protocols associated with delivering E911 services through multi-line systems. We note that the Model Legislation received much support from commenters in this proceeding.¹⁹⁹ We also support the goals and approach to achieving those goals embodied in the Model Legislation. The Model Legislation represents a carefully designed, well developed approach to MLTS E911 compatibility. We recommend that legislative bodies considering E911 issues consider the proposals contained in the Model Legislation.

59. We consider the Model Legislation to be particularly well-suited to guide state legislatures, because it offers a flexible approach to addressing MLTS implementation of E911. While the Model Legislation is comprehensive – addressing all aspects and parties involved in MLTS E911 implementation – it allows states to adopt rules based on local conditions and reflecting particular needs of the individual states. For example, the Model Legislation allows for a flexible initial deployment schedule. Additionally, the Model Legislation contains provisions for a waiver process, again allowing states to adapt legislation to local circumstances. We also note that some states have examined issues relating to MLTS E911 implementation and specifically point to the legislation adopted in Illinois as a reference for other states to consider.²⁰⁰ We expect that states will work quickly to adopt legislation in this area. In order to monitor their progress in doing so, we intend to issue a public notice in a year examining this topic. If we find that states do not appear to be filling this gap in the emergency call system, we may reconsider our decision not to implement national rules in this area.²⁰¹

60. Although we support the goals of the Model Legislation, we do not believe it is necessary, based on the record before us, for us to revise our Part 64 and 68 rules, at this time.²⁰² With respect to Part 64, NENA and APCO propose a new Subpart V to Part 64 to “assure the cooperation of local exchange carriers in providing switching, trunking and technical information needed for MLTS support of E9-1-1.”²⁰³ While we fully support the goal of the proposal, we are concerned that the proposed Part 64 amendments may be too vague, making them operationally unenforceable.²⁰⁴ Further, we note that the record is unclear as to the extent to which LECs offer E911 compatible trunking. Finally, we note that the section 64.3001 of the Commission’s rules requires all telecommunications carriers to transmit all 911 calls to appropriate public safety authorities.²⁰⁵ Thus, we believe that where a state requires MLTS E911 implementation, our rules would require telecommunications carriers to transmit the location information provided by the MLTS operator. Although we decline to adopt the Part 64 revision here, we seek comment on NENA’s Part 64 proposal, along with a further clarification from NEC, in the *Second Further Notice of Proposed Rulemaking, infra*, in order to fully develop the record on this topic.

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identified when a 911 call is placed. We decline to adopt the Consensus Proposal. Many of the original parties to the Consensus Proposal have since withdrawn their support. NENA and NASNA comments at 11-12. Further, as discussed *supra*, we have determined that this issue is best addressed at the state and local level.

¹⁹⁹ Washington State E911 Program comments at 8; NEC reply at 1-10; NENA and NASNA reply at 11-13. Some commenters express general support with certain exceptions noted in their comments.

²⁰⁰ See 50 Ill. Comp. Stat. § 750.

²⁰¹ See *Second Further Notice of Proposed Rulemaking, infra*.

²⁰² See *Model Legislation* at 6, exh. A.

²⁰³ *Id.*

²⁰⁴ For example, see proposed section 64-2102 which requires LECs to provide “a method for the MLTS operator to process 9-1-1 database records to the 9-1-1 Database Provider for the local public 9-1-1 system” without defining what acceptable methods might be or how affected parties would comply with this requirement.

²⁰⁵ See 47 C.F.R. § 64.3001.

61. With respect to Part 68, we disagree with those commenters that support adopting "uniform national" standards through Part 68 amendments.²⁰⁶ The proposed amendments to Part 68 are too vague to have any impact on the level of local coordination necessary to implement MLTS E911. Requiring MLTS to be E911 capable presents a set of issues and requirements beyond those implicated by non-multi-line systems, and involves coordination among a multitude of parties.²⁰⁷ For example, Verizon implements a MLTS E911 solution in New York under which each party along the 911 path is responsible for providing a service or technical function beyond that required for non-MLTS E911 provision.²⁰⁸ First, manufacturers must provide PBXs with direct inward dialing (DID) to support MLTS signaling through such systems as Centralized Automatic Message Accounting (CAMA)²⁰⁹ or Integrated Services Digital Network (ISDN)²¹⁰ interfaces in order to deliver the calling number identification that makes MLTS E911 possible. Both CAMA and ISDN are well-known, readily available technologies, the availability of which would be unaffected by a change to Part 68. Assuming a MLTS operator has a MLTS compatible PBX, any carrier involved must provide trunking and interfaces capable of transferring location information received from the MLTS. However, the MLTS operators must transmit this location data, and also must populate (and update) the ALI database to provide specific geographic cross-references to the transmitted data for the PSAP to receive. Finally, PSAPs must have the capability to receive this information. A general requirement in Part 68 that MLTS be E911 compatible would not contribute to this process.

62. Similarly, revising Part 68 to impose a particular technical solution would be inconsistent with our conclusion that the states are in a better position to determine the manner in which E911 should be deployed in a particular locality. Further, because multiple technical solutions are possible, any revision to Part 68 that would mandate a particular technology would possibly inhibit innovation.²¹¹ The

²⁰⁶ Avaya reply at 4; NEC reply at 1-9.

²⁰⁷ See Avaya comments at 2 ("However, for the rollout of MLTS E911 services to be successful and timely, other key players – namely, the wireline E911 service provider (typically the Local Exchange Company) and the requesting PSAP – must be ready and able to support MLTS emergency capabilities."). E911 transmits caller identification and location information to the PSAP. E911 also routes calls to the appropriate PSAP. The E911 network performs these tasks by using the following features: automatic number identification (ANI); selective routing (SR); and automatic location information (ALI). With these features, calls made from a residence or coin line easily identify the caller's emergency response location. These features alone, however, would not reveal the location of emergency calls originating from a MLTS. While each telephone within the organization served by a MLTS has a unique telephone number or extension that the MLTS recognizes for directing internal traffic and inbound calls, outbound external calls may not have a unique identifier, and therefore may be unable to transmit complete 911 information. See BRETSA comments at 8; Colorado Task Force comments at 4.

²⁰⁸ See Verizon reply at 3.

²⁰⁹ CAMA is an "arrangement that provides for the recording of detailed billing information at a centralized location other than an end office, usually a tandem. CAMA equipment also may be associated with operator systems, etc." See Telcordia Notes on the Networks, Telcordia Technologies Special Report, SR-2275, Issue 4, October 2000 at Glossary. A CAMA trunk is a dedicated trunk that uses multi-frequency signaling and reverse-battery call supervision to transmit a caller's ANI or another number which is used to identify the caller's location.

²¹⁰ ISDN is an "integrated digital network in which the same digital switches and digital paths are used to establish connections for different services, for example, telephony, data." See Telcordia Notes on the Networks, Telcordia Technologies Special Report, SR-2275, Issue 4, October 2000 at Glossary. An ISDN Primary Rate Access (PRA) line "offers 23 B channels and 1 D channel, also known as 23B + D. Information is delivered over a single T1-carrier system at a rate of 1.544 Mbps, which includes 8 kbps for overhead. PRA ISDN is full duplex and can serve large-business applications and PBXs." See Telcordia Notes on the Networks, Telcordia Technologies Special Report, SR-2275, Issue 4, October 2000 at Section 14.9.5.2.

²¹¹ For example, requiring that MLTS be modified and manufactured to ensure their compatibility with the E911 network, at this time, could mean requiring MLTS to be inherently compatible with CAMA trunks or capable of working with an adjunct device which allows a MLTS to be connected to a CAMA trunk. CAMA technology,

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Commission should not block the deployment of advanced digital solutions to E911 MLTS compatibility, such as VoIP and packet-based technologies, as doing so would be inconsistent with the Commission's policy to promote the advancement of new technologies. We strongly encourage industry standards-setting bodies to focus due attention on setting appropriate standards for MLTS E911 compatibility on an expedited basis.²¹² In addition, the rechartered Network Reliability and Interoperability Council should address the issue of obtaining location information for E911 calls from MLTS. Moreover, we strongly encourage MLTS operators to ensure that E911 services are available from their MLTS. As demonstrated in the record, a variety of technologies and vendors exist currently that make E911 compliance in the MLTS context quite feasible.²¹³ We believe that states are in a unique position to coordinate the disparate elements necessary for MLTS E911 implementation,²¹⁴ and need broad flexibility to bring E911 to all their citizens.

63. Finally, although we sought comment on the Commission's authority to require compliance with its E911 rules by manufacturers of multi-line systems,²¹⁵ because we do not revise our Part 64 or Part 68 rules, or otherwise impose requirements on MLTS manufacturers, we do not need to reach the issue of whether the Commission has authority to compel manufacturers to take steps to ensure MLTS E911 compatibility.²¹⁶ Any inquiry into whether we have such jurisdiction would be premature.²¹⁷

C. Telematics

64. Summary. In the *E911 Scope NPRM*, we observed the extent of telematics equipment that

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along with ISDN, is presently the only widely available network solution to MLTS E911 compatibility problems. However, CAMA is an older solution that we do not wish to impose as the default solution for MLTS compatibility. Industry representatives have developed a standard for the interface between MLTS and the CAMA trunk (EIA/TIA 689, Feb. 25, 1997). Thus, any manufacturer that wishes to ensure that its MLTS can accommodate CAMA trunks or be modified to accommodate CAMA trunks is able to do so consistent with an industry standard.

²¹² UTC comments at 8 ("Uniform standards that are developed by the industry are likely to reduce equipment costs and reflect the current state of technology In order to encourage the development of new technologies, the Commission should not adopt rules of guidelines for new technologies at this time.").

²¹³ For example, Verizon has a tariffed service that provides E911 support to PBX switches and Centrex customers. Verizon reply at 4. See discussion of CAMA and ISDN, *supra*. See also RedSky Sept. 17 *Ex Parte* Letter.

²¹⁴ For example, states and localities are in the best position to consider the unique characteristics of their cities, *e.g.*, building stock composition (old vs. new buildings), problem areas, university or hospital environments, in determining their E911 needs.

²¹⁵ *E911 Scope NPRM*, 17 FCC Rcd at 25608-09, para. 91.

²¹⁶ Although some commenters focus their attention on whether the Commission has jurisdiction over operators of multi-line systems, the decision we reach here does not require us to assert such jurisdiction, and we do not address those issues here. See Ad Hoc comments at 1-2. We note that Ad Hoc argues that the Commission lacks jurisdiction to impose regulations on operators of MLTS at places of employment because such "workplace" regulations are subject to the jurisdiction of state regulations and the Occupational Safety and Health Administration (OSHA). Ad Hoc comments at 1-13. But see NENA and NASNA reply at 12 ("We cannot accept, however, Ad Hoc TUC's assertions that the issue of 9-1-1 access through MLTS on business premises belongs with the federal Occupational Safety and Health Administration or its state counterparts rather than the FCC."). Because we do not reach the issue of whether the Commission has jurisdiction over MLTS operators, we similarly decline to address Ad Hoc's argument that OSHA has jurisdiction over MLTS E911 compatibility in workplace environments.

²¹⁷ We note that commenters' views varied on whether the Commission has jurisdiction over manufacturers. See, *i.e.*, TIA comments at 4-17 (arguing the Commission lacks jurisdiction); UTC comments at 10 ("UTC agrees that the Commission has the legal authority to require MLTS equipment manufacturers to provide E911 capability, however the Commission should at this time refrain from exercising its authority over manufacturers.").

manufacturers had begun to install in vehicles on the Nation's highways. In view of the predicted trends for growth of the telematics services industry and the increasing role that it appeared to have in contributing to the public safety needs of the Nation's drivers, we sought comment on the Commission's current regulatory approach to such services and on possible future approaches.²¹⁸ We received 18 comments and 11 reply comments on the telematics issues. After considering the record with respect to telematics systems, we conclude that we should not impose the E911 requirements on telematics providers that do not provide a commercial mobile radio service that interconnects with the public switched network (PSTN). We also conclude that given the on-going testing of the advanced capabilities of telematics systems, the better course is for the Commission to take an informal approach in assisting stakeholders' implementation of such capabilities. We believe that the Commission's active participation in the mutual efforts between public safety organizations and private industry will encourage them to continue to provide expeditiously the benefits of prompt emergency response to the public in the event of life-threatening emergencies on the Nation's highways.

65. Background. The *E911 Scope NPRM* noted that telematics can generally be defined as the integrated use of location technology and wireless communications to enhance the functionality of motor vehicles.²¹⁹ The embedded in-vehicle equipment applications of telematics systems provide safety and concierge services through integrated vehicle communications and navigations systems. These systems employ Global Position System (GPS) technology to provide directions, track a vehicle's location, and help a caller obtain emergency assistance in the event of an accident. Telematics units in vehicles may also provide an automatic crash notification (ACN) capability that enables such units to automatically call an emergency services dispatcher for help in an accident. That capability may include the transmission of data pertaining to the area and extent of damage to the vehicle, air bag deployment, and information on the occupants' condition.²²⁰

66. The comments generally indicate that in this emerging environment two models of telematics systems are the most prevalent – first, a standard or telematics-only model and, second, a model based on the first that also integrates and provides Commercial Mobile Radio Service (CMRS) for voice calling to and from other end users. Both models rely on the service of an underlying licensed wireless carrier who provides a direct communications link between the vehicle and the call center or advisor of the telematics service provider. In the standard telematics model, data and voice communications are transmitted over this link only to the telematics call centers²²¹ and cannot transmit and receive commercial wireless calls between occupants in the vehicle and other wireline or wireless end users.²²² It is over the link to their call centers that telematics service providers furnish their concierge type and emergency services through the call center. The emergency call the telematics subscriber makes by pressing the “hot button” in the vehicle is also transmitted over this link. The call center screens the emergency calls and reports the information on genuine emergencies by calling the PSAP on its ten-digit phone number.

67. In the alternative model, however, the telematics service provider also provides to its subscribers the option of a wireless commercial mobile radio service (CMRS).²²³ Subscribers who can

²¹⁸ See *E911 Scope NPRM*, 17 FCC Rcd at 25601, paras. 61-63.

²¹⁹ See *E911 Scope NPRM*, 17 FCC Rcd at 25600, at para. 58, citing Year 2000 Biennial Regulatory Review – Amendments of Part 22 of the Commission's Rules to Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service and other Commercial Mobile Radio Services, WT Docket No. 01-108, *Report and Order*, 17 FCC Rcd 18485 (2002) (*Biennial Review Report and Order*), at para. 18 n.56.

²²⁰ See *id.*

²²¹ ATX Technologies comments at 8-9; Toyota comments at 7.

²²² ATX Technologies comments at 8-9.

²²³ See MBUSA reply at 2-3.

use CMRS also have a choice of dialing 911 in an emergency and reaching a PSAP directly in addition to making emergency calls to the call center over the telematics link. In a recent order, the Commission determined with respect to one telematics provider, OnStar, that licensed wireless carriers providing CMRS for its commercial wireless calling option did have an obligation to meet the Commission's E911 requirements.²²⁴ Due to the problems with reconciling the autonomous GPS systems of telematics with the GPS technology on which Commission rules for traditional mobile handsets are based, the Commission granted OnStar's wireless carrier partners a waiver of the pertinent parts of Section 20.18 of the rules until December 31, 2005.²²⁵ In reaching this conclusion, the Commission also considered that OnStar needed to accommodate the transition from analog to digital based systems in modifying its embedded vehicle equipment to provide E911 Phase II capabilities for its commercial wireless service offering.²²⁶

68. Commenters generally contend that standard telematics service does not meet the four criteria for imposing E911 obligations we sought comment on for new services and devices in this proceeding: (1) it does not interconnect to the PSTN, (2) subscribers have no expectation of direct access to 911, (3) it does not compete with CMRS, and (4) there are significant technical issues that do not make it operationally feasible to implement E911 capabilities.²²⁷ Commenters further add that telematics systems deliver substantial public safety benefits with their call center-based service, and provide location capabilities that exceed the criteria in the Commission's Rules.²²⁸ Consequently, they contend that the imposition of E911 Phase II requirements is either unnecessary or problematic for telematics providers.²²⁹ The comments focus primarily on the first two criteria. The record indicates that telematics systems are still in the early stages of development and constitute a relatively new and evolving technology.²³⁰

69. In addition, commenters contend that the Commission should not impose obligations with regard to the direct transmission of emergency calls made over the telematics communications link to a PSAP. Similarly, they argue that there should be no requirements for the transmission of ACN data to PSAPs, because public safety organizations, service providers, manufacturers, and emergency provider stakeholders are continuing the process of trial programs and formulating standards.²³¹

70. Discussion. We find that telematics service providers that provide a standard service, *i.e.*, do not provide a commercial wireless service that connects to the PSTN, offer an alternative to our E911

²²⁴ Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Order, FCC 03-242 (Oct. 21, 2003) (*OnStar Order*).

²²⁵ See *OnStar Order*, at paras. 24, 30.

²²⁶ See *OnStar Order*, at paras. 24-26; see 47 C.F.R. § 20.18(g).

²²⁷ ATX Technologies comments at 9; MBUSA comments at 2 (contending that its "Tele-Aid" service does not meet the criteria); OnStar comments at 4, 9; Toyota comments at 10 (making similar contentions concerning its "Lexus-Link" service); Verizon comments at 3. Toyota further suggests that even telematics units providing CMRS voice calling service under the alternative model do not meet the criteria. See *Ex Parte* Letter from W. Carnell, counsel for Toyota North America, to J. Muleta, Chief Wireless Telecommunications Bureau, Federal Communications Commission (Oct. 9, 2003).

²²⁸ ATX Technologies comments at 6; BMW Group comments at 2 (asserting that call centers, unlike CMRS cell tower-based systems, ensure that emergency calls are directed to the PSAP in the jurisdiction where first responders can promptly react to the call); ITSA comments at 7; MBUSA comments at 7; OnStar comments at 8-10.

²²⁹ BMW Group comments at 2; ITSA comments at 3, 5; OnStar comments at 8; Alliance of Automobile Manufacturers of America reply at 2.

²³⁰ ATX Technologies comments at 11 (having less than 2 percent market penetration); AIAM comments at 2; Intelligent Transportation Systems of America (ITSA) comments at 3.

²³¹ See ATX Technologies comments at 12-13; ComCARE Alliance comments at 23-24; OnStar comments at 3, 12.

requirements that comparably meets the objectives that the Commission initially set forth in adopting its E911 rules. We conclude that for the reasons set forth below, the imposition of Phase I and Phase II E911 requirements on such providers of telematics-only services is not warranted. Further, we clarify that telematics providers offering an interconnected switched voice service, *i.e.*, service "[t]hat is interconnected with the public switched network, or interconnected with the public switched network through an interconnected service provider, that gives subscribers the capability to communicate to or receive communication from all other users on the public switched network,"²³² may have E911 obligations under rules adopted today,²³³ depending on the nature of the relationship the telematics provider has with the underlying licensee.

71. *Relation of Telematics to CMRS Service and E911 Location Requirements.* We undertake our analysis by determining whether telematics services should be subject to E911 requirements on the basis of the four criteria set out in the *E911 Scope NPRM*. First, we find that telematics providers that provide call center-based emergency service that does not use commercial wireless service to communicate with the call center do not meet the criteria for a service that interconnects with the PSTN pursuant to the Commission's rules. We agree with commenters that standard telematics service does not meet this criterion because it relies solely on a dedicated link to the call center, which is the only wireless end user.²³⁴ This limitation precludes telematics equipment for that service from transmitting and receiving commercial wireless calls between the vehicle's occupants and other wireline or wireless end users.²³⁵ Consequently, although telematics providers have the dedicated link between the call center and an underlying wireless carrier, customers of standard telematics service providers have no capability to communicate with other end users on the PSTN, *i.e.*, they cannot directly dial out of the network of the telematics provider to a specific number outside the call center.²³⁶ For emergency service they rely on reaching the call center rather than dialing 911.

72. Further, we recognize that telematics systems may offer location capabilities that are either equivalent, or superior, to our E911 rules that apply to licensed carriers connecting to the PSTN. BMW Group asserts that telematics services generally outperform the accuracy requirements of E911.²³⁷ BMW describes the telematics system in its vehicles as using dead reckoning, map matching, and GPS technology that is capable of providing a location to within 11 yards.²³⁸ ATX Technologies submits that the GPS capabilities in cars with its units exceed the Commission's E911 accuracy requirements for wireless location technologies all over the country.²³⁹ Telematics call centers provide PSAPs with more accurate location information and on a consistent nation-wide basis.²⁴⁰ Based on autonomous GPS technology, embedded telematics devices currently deliver nationwide precise GPS-based location information with every emergency call, regardless of whether the PSAP is Phase II ready.²⁴¹ Thus, we

²³² 47 C.F.R. § 20.3.

²³³ See *infra* Section IV.D., Resold and Pre-paid Calling.

²³⁴ See ATX Technologies comments at 8; MBUSA comments at 4. See also, NENA/NASNA comments (contending that to the extent telematics providers offer customers the ability to connect directly to the PSTN, they should be required to comply with the E911 rules); Washington State E911 Program comments at 6.

²³⁵ See ATX Technologies comments at 8-9; Verizon reply at 3 & n.7.

²³⁶ See MBUSA comments at 4.

²³⁷ BMW Group comments at 2.

²³⁸ BMW Group comments at 2. Cf. Commission's E911 Phase II requirements, 47 C.F.R. § 20.18(g).

²³⁹ ATX Technologies comments at 6, n.5.

²⁴⁰ BMW Group comments at 2. See also, ITSA comments at 7.

²⁴¹ OnStar comments at 8; ComCARE Alliance reply at 8.

find that the call center approach used by telematics providers allows for the delivery of the precise telematics location information to PSAPs that have not upgraded their systems to automatically receive such information.²⁴² ITSA also submits that telematics service providers furnish this information without causing PSAPs to incur additional costs.²⁴³

73. *Other Telematics Call Center Public Safety Capabilities.* Further, we find that the public safety benefits of these technical capabilities are enhanced through the call centers that telematics providers have established as the initial emergency contact for their subscribers. Most commenters, including public safety organizations, agree that call centers perform a useful service²⁴⁴ and provide several capabilities that advance other objectives of E911 requirements. For example, some commenters indicate that call centers, unlike the cell tower-based systems of CMRS carriers, ensure that the call is directed to the PSAP in the correct jurisdiction.²⁴⁵

74. As noted in the *E911 Scope NPRM*, in their capacity as the initial contact, telematics call centers have a screening capability. The record substantiates that call centers can perform several valuable screening functions.²⁴⁶ With the advisors assigning a priority level to each call, call centers are able to offer and dispatch assistance for calls that are not life threatening emergency calls, such as those requesting assistance for typical roadside emergencies, (e.g., broken down vehicle, a vehicle out of gas, or a flat tire).²⁴⁷ For situations that require extensive or higher level emergency service response from public safety officials or medical emergency personnel, the call center can transfer the caller to the appropriate PSAP. Moreover, the telematics call center approach allows the advisor or representative to collect information on the nature of the emergency, enabling them to request the appropriate emergency service to be dispatched to the scene.²⁴⁸

75. We agree with commenters that such filtering of calls that might otherwise go to the PSAP if 911 were dialed is a valuable service that relieves pressure on PSAPs.²⁴⁹ ATX Technologies submits that its call centers transfer only about 40 percent of "hot button" calls to a PSAP because the "emergency" reported is not one that a PSAP would typically handle.²⁵⁰ ATX Technologies asserts that out of the 1.1 million calls received in 2002 by ATX Technologies, only 4700 involved an in-vehicle emergency or notification of impact.²⁵¹ In 2002, of all the calls BMW's telematics service handled, only 2 percent needed to be and were actually connected to PSAPs.²⁵²

²⁴² See ITSA comments at 7; OnStar comments at 8.

²⁴³ ITSA comments at 7.

²⁴⁴ NENA/NASNA comments at 9.

²⁴⁵ BMW Group comments at 2; see OnStar comments at 9-10; see also, *supra*, note 228.

²⁴⁶ See BMW Group comments at 2; MBUSA comments at 7; OnStar comments at 9.

²⁴⁷ OnStar comments at 9. We do not find it necessary for the Commission to become involved in the issue concerning the training of call center advisors. The record indicates that telematics service providers train their advisors in handling emergency calls. See ATX Technologies comments at 8; OnStar comments at 4, 9; Toyota reply at 7; cf. BRETSA comments at 6.

²⁴⁸ MBUSA comments at 8, n.15; see ATX Technologies comments at 10.

²⁴⁹ Intrado comments at 9; MBUSA comments at 7 (asserting that the call center filtering function actually saves PSAPs time); OnStar comments at 9.

²⁵⁰ ATX Technologies comments at 8.

²⁵¹ ATX Technologies comments at 4; see also, *id.* at 6 (asserting that 2300 out of the 4700 calls were automatic airbag notifications).

²⁵² BMW Group comments at 2.

76. We find that with such capabilities, telematics services constitute an alternative to E911-capable commercial wireless services that is consistent with the public safety goals that the Commission set forth in the proceeding to adopt wireless E911 requirements.²⁵³ There, the Commission enunciated that the public safety advantages for E911 constituted significant objectives for wireless service. Stating that E911 saves lives and property by assisting emergency services personnel in doing their jobs more quickly and efficiently, the Commission determined that the capability of Automatic Location Identification (ALI) to permit rapid response in situations where callers are disoriented, disabled, or otherwise unable to articulate their location, to permit the immediate dispatch of emergency assistance to the location in these situations, and to reduce errors in reporting the location and in forwarding accurate information to emergency personnel are significant benefits that the public safety demands from the advanced emergency capabilities of E911 systems.²⁵⁴ We conclude that telematics services generally achieve those objectives.

77. *Telematics Customer Expectations.* With respect to the second criterion, we find that with the above response capabilities in the telematics call center approach, telematics-only service also does not generate a reasonable expectation among its customers to have access to 911 and E911 services. The record indicates that telematics subscribers understand the manner in which emergency services are delivered over telematics-only systems, and therefore, do not expect that they can dial a PSAP directly. Several commenters contend that customers using telematics-only systems do not expect to contact a PSAP directly for their "hot button" calls to request assistance,²⁵⁵ and that there is no evidence of confusion that the use of the "hot button" feature provides direct contact with a PSAP.²⁵⁶ Further, Toyota submits that the marketing literature for its telematics service makes clear that emergency service is provided through a "dispatcher," and customers sign a notice that clearly states that they understand "Lexus Link is not a cellular telephone."²⁵⁷ MBUSA adds that sales representatives, the structure of the fee for its telematics service program, and the labeling of the "hot button" with "SOS" rather than "911" for its Tele-Aid system inform users that pressing "SOS" does not directly dial 911.²⁵⁸ On the other hand, concerning OnStar systems which have the capability of providing access to either a call center or directly to a PSAP, OnStar submits that there is no evidence that additional notice needs to be given regarding how its system works in emergencies.²⁵⁹ We conclude that consumers of a telematics service that does not offer CMRS understand the capabilities of the telematics system in their vehicles and do not expect that they will initially reach a PSAP when making their calls for emergency assistance.

78. We find, however, that as variations on the two general models for telematics service develop with new devices or offerings, telematics service providers may further need to clarify the nature and capabilities of their emergency service offerings to consumers. For instance, with offerings that may provide subscribers access to a call center or advisor through the two-way voice calling offering of a CMRS network, such as AAA describes,²⁶⁰ we are concerned that customers may reasonably expect

²⁵³ *E911 First Report and Order*, 11 FCC Rcd at 18679, para. 5.

²⁵⁴ *E911 First Report and Order*, 11 FCC Rcd at 18681, para. 8. See also, *id.*, at 18681, para. 9 (on wireless E911 resulting in deployment of technologies that speed the delivery of assistance to people in emergency situations and more reliable 911 service coverage over wider geographic areas).

²⁵⁵ Toyota comments at 8 (asserting that their customers' willingness to purchase both telematics services and commercial wireless telephone service in their vehicles demonstrates their understanding of each service). BMW Group comments at 5; ComCARE Alliance comments at 31.

²⁵⁶ MBUSA comments at 11; AIAM comments at 2.

²⁵⁷ Toyota comments at 9, 21.

²⁵⁸ Mercedes comments at 9.

²⁵⁹ See OnStar comments at 11.

²⁶⁰ AAA comments at 3.

immediate access to a PSAP. As the telematics industry continues to grow and such variations based on providing CMRS to telematics customers are implemented, there will be a need for customers to understand how they can obtain emergency service. Another goal for implementing the Commission's E911 regulations has been the need to explore further means of improving consumer education so that users of wireless services will be able to determine rationally and accurately the scope of their options in accessing 911 services from mobile handsets.²⁶¹ Thus, we urge telematics providers to continue to ensure that their customers understand the different emergency capabilities of their service offerings and, if CMRS is offered, to explicitly notify them that they also have direct access to 911.

79. *Telematics as a Competitive Alternative to CMRS or Wireline Service.* Concerning the third criterion – whether the service examined competes with traditional CMRS or wireline local exchange service, we find that the standard telematics model does not provide competition to those services. Because it does not interconnect with the PSTN, except through a 'private' dedicated line as described above, the standard telematics model does not offer the same capability for customers to make calls to more than one end user, i.e., the telematics call center. Thus, we agree with ATX Technologies that telematics in its standard form does not resemble CMRS.²⁶² On the other hand, we find for the reasons stated above, that the alternative telematics model, which offers CMRS, has the capability by virtue of interconnecting with the PSTN for voice service with other end users to compete with typical CMRS offerings and, also, wireline local exchange service.

80. *Operational and Technical Feasibility.* We find that the fourth criterion regarding the feasibility of a service to support E911 can also be evaluated in the context of the standard telematics service versus the alternative model. We agree with the contentions of commenters that for standard telematics service, it would be operationally and technically unfeasible to require telematics providers to comply with the Commission's E911 rules. Given that the standard telematics service does not offer CMRS, we find that mandating E911 requirements for that model would have a significant adverse impact on telematics providers.²⁶³ The automotive product life-cycle pertaining to the development, testing and production of the standard telematics model for incorporation into a vehicle's electrical architecture would be significantly constrained due to the substantial lead time required to either modify or develop capabilities compatible with current E911 regulations.²⁶⁴ Further, imposing E911 requirements would create technical problems in that the autonomous GPS used by telematics differs from the assisted GPS/AFLT system used by wireless carriers that is compatible with the E911 solutions that they are deploying.²⁶⁵ Moreover, the migration from analog to digital based telematics services already poses complications for telematics providers. In addition, we find that there would be a secondary impact on PSAPs, who would incur additional cost burdens to accommodate widespread changes in the operation of standard telematics services were we to adopt E911 regulations.²⁶⁶

81. As for telematics service that offers CMRS, however, the record for the recent *OnStar Order* indicates that the technical difficulty in reconciling the different GPS technologies of embedded

²⁶¹ *E911 First Report and Order*, 11 FCC Rcd at 18682, para. 9.

²⁶² ATX Technologies comments at 8.

²⁶³ See Toyota comments at 11; Verizon reply at 3.

²⁶⁴ See Toyota comments at 10-11, 22-23 (telematics units are subject to extensive validation and phase-in requirements as part of the automotive product cycle that may be five years or more); see also, OnStar comments at 7, 14-15; ATX Technologies reply comments at 12-13.

²⁶⁵ Toyota comments at 12.

²⁶⁶ ATX Technologies reply comments at 12-13; ComCARE Alliance reply comments at 7. We note that PSAPs might also lose some of the operational benefits due to the screening function that standard telematics service provides.

telematics systems as compared to traditional handsets can be resolved. We also recognize that OnStar plans a phase-in of units that will be fully compliant.²⁶⁷ The effort to resolve the technical and operational complexities due to any differences among the networks of underlying wireless carrier partners continues.

82. Therefore, upon fully assessing all of the comments in this proceeding,²⁶⁸ we conclude that there is no need to adopt the Commission's E911 requirements for telematics-only service at this time, because that service does not satisfy the four general criteria. We further conclude that the alternative telematics model meets the four criteria, including operational and technical feasibility. In addition, from our consideration of the record, we have become increasingly aware that variations on the two telematics models may evolve, blurring the delineation between telematics-only services and those that offer two-way voice calling over the CMRS network. The record indicates other telematics service models may develop that connect the caller to a call center via commercial wireless calling over the PSTN rather than the direct link of the "pure" telematics model to only a call center. Such a call center might be operated by the road club or service to which the caller subscribes.²⁶⁹ For instance, AAA contemplates that a subscriber to its road club service would reach it by dialing an 800 number or with pre-set one-key dialing in the handset.²⁷⁰ In such a model, the caller also appears to still have the alternative of dialing 911. As the recent *OnStar Order* reflects, we clarify that telematics service providers who choose to offer services that rely on the commercial wireless service provided by underlying wireless carriers need to continue to coordinate with those carriers, so that regardless of the legal relationship between the carrier and the telematics provider E911 requirements pursuant to section 20.18(g) of the rules can be met.²⁷¹ We find that this guidance sufficiently addresses the issues that Toyota has concerning the *OnStar Order* and renders them moot.²⁷² Furthermore, as different telematics models evolve, we encourage entities evaluating their new product and service offerings to consider the four-part test to comply with E911 requirements, and we reserve the right to revisit potential E911 obligations in the future. In addition, we remind those telematics providers who offer interconnected CMRS voice service of their obligations pursuant to Section 255 of the Communications Act.²⁷³

83. *Direct Delivery of Telematics Calls.* In the *E911 Scope NPRM*, we also sought comment on the timeliness of the delivery of calls to a PSAP or other appropriate local emergency authority. Based on our review of the record, we find that although some entities express concern that the call center approach

²⁶⁷ See *OnStar Order*, at para. 26.

²⁶⁸ We note that the comments on which the *OnStar Order* is based are also part of CC Docket 94-102.

²⁶⁹ We also conceive the possibility in which a call center might even be a sophisticated, computerized "electronic-concierge."

²⁷⁰ The call center operator would inform the caller how to transmit the location information, e.g., pressing a "hot button" on a specially equipped mobile phone that transmits GPS-generated location information over the same communications path (existing CMRS infrastructure) and other information generated during the call. AAA comments at 3.

²⁷¹ To the extent that OnStar is considered a reseller of CMRS voice service, we extend the terms of the *OnStar Order* of October 21, 2003 with regard to a waiver of section 20.18(g) to On-Star for the same reasons we waived the equipment activation and compliance plan requirements for Verizon Wireless as the licensee of On-Star's underlying service." See *OnStar Order* at paras. 34-35. 47 C.F.R. § 20.18 (g); see *infra* Section IV. D, Resold and Pre-paid Calling. We clarify and further extend that waiver so that, consequently, any telematics units that are capable of providing CMRS service and are installed in vehicles as of December 31, 2005, i.e., vehicles manufactured by December 31, 2005, will not have to comply with current E911 regulations. See *OnStar Order* at paras. 1, 24-27, 31, 34-35.

²⁷² See *Ex Parte* Letter from W. Carnell, counsel for Toyota North America to M. Dortch, Secretary, Federal Communications Commission (Nov. 3, 2003). See also, *supra*, note 271.

²⁷³ See *supra*, Sec. III, Legal Authority, at para. 17.

may create delay in customers obtaining emergency service, specific requirements for the direct delivery of calls from those telematics systems, including the direct transmission of automatic crash notification data, are not warranted at this time. The comments indicate a concern that the call center approach may lead to a delay in getting emergency service personnel to the scene. Upon the telematics customer contacting the call center, the call center contacts the PSAP over an administrative line via a 10-digit phone number provided by the PSAP.²⁷⁴ The Boulder Regional Emergency Telephone Service Authority (BRETSA) contends that emergency calls and information received from telematics providers should be transferred and handled by trained personnel at a PSAP at the earliest possible moment.²⁷⁵ BRETSA further argues that such calls should be transferred using E911 trunks where they are available, and not the administrative number for the PSAP, and that the call should include transmission of the ANI and ALI.²⁷⁶ Conversely, other commenters, such as ComCARE Alliance, contend that the Commission should not require delivery of call center calls over dedicated E911 trunks because the diversity of 911 systems does not allow for requiring such a mandate.²⁷⁷

84. We do not find a sufficient basis for adopting regulations that specify how a telematics call and the information it contains should be routed by the call center to a PSAP. First, we find that any delay in the process of call centers contacting PSAPs may be minimal. For instance, MBUSA points out that with its telematics system, it takes an average of less than 60 seconds for the call to be received at the call center and then directed to the appropriate PSAP.²⁷⁸ Also, any additional time that may be attributable for a PSAP to call back may be eliminated because call back may be unnecessary due to the fact that the telematics calls can be conferenced between the call center and the PSAP.²⁷⁹ In addition, the screening function performed by the call center may actually save some PSAPs valuable time.²⁸⁰

85. In addition, we agree with ComCARE Alliance that requiring telematics providers to deliver emergency calls over E911 trunks would burden local PSAPs who may be at different stages of updating their systems.²⁸¹ We find that not all PSAPs may be ready for or prefer the recommendation of the BRETSA for their particular local emergency service operation.²⁸² NENA and NASNA are of the view that the integration of the communication of voice and data information from telematics call centers directly into public safety communications networks is a long term goal.²⁸³ Further, there appears to be an overall lack of consensus among PSAPs on how to use data generated by telematics devices in the way BRETSA suggests.²⁸⁴ We concur with the Technical Affairs Committee of Association of International

²⁷⁴ ATX Technologies comments at 5.

²⁷⁵ BRETSA comments at 5.

²⁷⁶ BRETSA comments at 5-7

²⁷⁷ ComCARE Alliance reply at 14; MBUSA comments at 16 (referring to APCO news release as opposing any new regulation requiring direct transmission of emergency calls to PSAPs).

²⁷⁸ MBUSA comments at 8; *see also*, OnStar comments at 5.

²⁷⁹ MBUSA comments at 8 (also describing that should some problem cause the call to disconnect, the system is programmed to call back the call center). *See also*, OnStar comments at 5. *Cf. E911 Scope NPRM*, 17 FCC Rcd at 25602-03, para. 69 (regarding potential time problem with delivery of call back number).

²⁸⁰ MBUSA reply at 7.

²⁸¹ ComCARE Alliance comments at 14.

²⁸² *See id.*

²⁸³ NENA/NASNA comments at 10. *See also, infra*, at para. 87.

²⁸⁴ MBUSA comments at 15; ATX Technologies comments at 15; Intrado comments at 10 (concerning the differing needs that PSAPs and other emergency medical service (EMS) providers may have with respect to all the data elements, such as those transmitted by ACN).

Automobile Manufacturers (AIAM) that because of the national scope required for telematics to work, and the inconsistencies among PSAPs' systems, E911 regulation of telematics would impair the developing operational relationship of telematics systems to those public safety entities.²⁸⁵ In view of this context, we conclude that it would be difficult to craft E911 regulations that would provide the flexibility needed yet ensure that ANI/ALI, and perhaps additional information, are transmitted.²⁸⁶ In spite of such complexities, we, nevertheless urge telematics service providers to continue to work with the public safety community on using E911 trunks more extensively by pursuing the approaches we address below.²⁸⁷

86. *Automatic Crash Notification Data.* Although there appears to be merit in BRETSA's proposal to use E911 trunks for transferring calls from telematics call centers to PSAPs,²⁸⁸ as applied to the transmission of ANI/ALI data, and potentially ACN data, we find that the measures it would involve are better considered as part of extensive cooperative efforts by all stakeholders in modernizing the E911 services. In the *E911 Scope NPRM* we sought comment on what, if any, role the Commission should play regarding delivery of ACN data from telematics providers, including all aspects of potentially extending our E911 rules to include delivery of ACN data by telematics providers to PSAPs.²⁸⁹ The direct transmission of such information could provide substantial public safety benefits. It would allow PSAPs to evaluate more quickly and accurately the level of resources needed at the scene of an accident. Delivery of ACN would also provide PSAPs and other emergency personnel, such as first responders and hospitals, the information necessary to treat injured victims promptly and with the care they deem necessary.

87. First, we note that several commenters refer to the problems noted by the Hatfield Report.²⁹⁰ For example, ATX cites the Hatfield Report finding that the current 911 network is not capable of accepting telematics data.²⁹¹ Consequently, they contend that it is not advisable to compel telematics providers to integrate backwards into the "antiquated" 911 legacy network. ComCARE Alliance and Washington State E911 Program submit that the findings of the Hatfield Report with respect to transmission of information from telematics systems should be part of a long term effort to incorporate new technologies.²⁹² NENA urges that the approach to telematics must assure a well designed interface with the E-911 infrastructure before there is a crisis for the 911 community and that the Commission

²⁸⁵ AIAM comments at 3.

²⁸⁶ Intrado raises the issue of whether telematics providers should be required to support the costs of the interface between telematics call centers and the legacy 911 network in terms of PSAP upgrades to evaluate the telematics data elements, such as ALI, that can be transmitted. We consider this issue outside the scope of this proceeding. See Intrado comments at 9.

²⁸⁷ We recognize that individual PSAPs or a regional system of PSAPs may prefer continued routing of incoming calls from telematics call centers over administrative lines to avoid congestion in particular situations, e.g., during emergencies with an impact over a wide area.

²⁸⁸ See BRETSA comments at 7. For example, NENA/NASNA informs that direct transmission of ACN in a trial program in Harris County, Texas is through 911 trunks to PSAP. NENA/NASNA comments at 9-10.

²⁸⁹ See *E911 Scope NPRM*, at paras. 74-75 (stating that "ACN functionality allows for the transmission of crash information (i.e., whether the vehicle rolled over, the measured deceleration of the vehicle at the time of the crash, the principal direction of force) to the telematics providers, and possibly to emergency responders.").

²⁹⁰ Public Notice, "Wireless Telecommunications Bureau Seeks comment on Report on Technical and Operational Wireless E911 Issues," WT Docket No. 02-46, DA 02-2666 (Oct. 16, 2002) (concerning Report filed by Dale Hatfield on Oct. 15, 2002). See ATX Technologies comments at 14; Motorola comments at 2.

²⁹¹ ATX Technologies comments at 14.

²⁹² ComCARE Alliance comments at 4; Washington State E911 Program comments at 2.

should give it priority.²⁹³ ATX Technologies and other telematics service providers are working with NENA in the development of technical standards for communications between the providers' call centers and PSAPs during emergencies.²⁹⁴

88. We agree that the integration of telematics, and particularly ACN, raises valid public safety concerns and requires continued, long term emphasis and involvement by the Commission. In this vein, we find that developments, such as the recent trials noted by various commenters,²⁹⁵ should continue to be monitored. We concur with the concern of those commenters that because such field testing of ACN is still in the early stages, the Commission should allow the voluntary approaches for information exchange that engage all stakeholders.²⁹⁶ These field trials are evaluating the best routes by which to transmit calls and data without imposing undue burdens or costs on PSAPs and which are most reliable.²⁹⁷

89. We find that the telematics industry is working closely with the public safety community to develop means of conveying more information that may be useful to the 911 call centers. This cooperation is helping the interested parties develop standards for the formats used to relay ACN to a secure website for use by public safety personnel to manage information regarding the type of crash and injuries.²⁹⁸ Telematics service providers have participated in ComCARE's National Mayday Readiness Initiative (NMRI) and on its ACN Committee to develop a standardization of the data set that could be used to transmit information from telematics units to emergency agencies.²⁹⁹ We also note that their efforts include further discussions with automobile manufacturers (OEMs) to work with public safety groups on how the migration to digital telematics systems might complement or comport with the E911 Phase II criteria, dependent on whether CMRS personal calling service is offered.³⁰⁰ We recognize, for instance with regard to the Phase II criteria, the long-term product life-cycle planning that telematics providers and OEMs undertake for the operation of telematics units that are a part of a vehicle's electrical architecture.³⁰¹ We further realize the impact that this developmental aspect of providing telematics services has on achieving the public safety benefits that various stakeholders have been discussing for

²⁹³ NENA/NASNA reply at 11.

²⁹⁴ ATX Technologies comments at 12; OnStar comments at 6.

²⁹⁵ See ComCARE Alliance comments at 44-45 (referring to test of Minnesota's Mayday Plus System and grant of USDOT Public Safety Program to Minnesota DOT); NENA/NASNA comments at 9-10 (concerning trial in Harris County, Texas); OnStar comments at 12-13 (referring to Minnesota trial and one in Northern Shenandoah Valley, Virginia); AIAM comments at 2; MBUSA comments at 15; *see also*, *E911 Scope NPRM*, 17 FCC Rcd at 25602, nn. 179-80 (mentioning the above field trials in Virginia and Harris County, Texas).

²⁹⁶ See *e.g.*, ATX Technologies comments at 19.

²⁹⁷ ATX Technologies comments at 14; BMW Group comments at 5 (concerning initiatives by telematics providers and PSAP organizations that are complemented by USDOT funded and state initiated projects in Virginia, Texas, and Minnesota).

²⁹⁸ ATX Technologies comments at 12-13; OnStar comments at 3, 12 (working with the ACN Subcommittee of NENA's Nontraditional Access Committee to considering new possibilities to providing location and other relevant information via advance automatic crash notification (AACN) to PSAPs, traffic management officials, first responders, secondary PSAPs, and hospital emergency rooms).

²⁹⁹ See ComCARE Alliance comments at 23-24; for example, ATX and OnStar are participants in the ComCARE Alliance. ComCARE Alliance comments at 23; OnStar comments at 12.

³⁰⁰ See *Ex Parte* Letter from W. Carnell, counsel for Toyota North America, to M. Dortch, Secretary, Federal Communications Commission (Oct. 10, 2003) (apprising Wireless Telecommunications Bureau staff of Nov. 17, 2003 meeting of automobile OEMs and telematics service providers with APCO, NENA, and other stakeholders).

³⁰¹ See *OnStar Order*, at paras. 26, 32 (addressing factor of product life-cycles). See *also*, OnStar comments at 13-14; Toyota comments at 22-23 (concerning impact of long product life-cycles in relation to regulation).

ACN.³⁰² Consequently, we urge telematics providers to continue to coordinate with the underlying CMRS carriers and public safety groups, including the PSAP community and other stakeholders, on the relay of ACN information that is important to public safety. The Commission also provides avenues for further coordination through an informal approach, such as its E911 Coordination Initiative.³⁰³

90. In this still experimental environment, we find that the appropriate course is to defer any regulatory action, but actively support the cooperative efforts that have been undertaken. We agree with ComCARE Alliance that existing cooperative efforts by public safety organizations, the telematics industry, and any standards setting bodies should be allowed to continue unfettered by regulation that might otherwise restrict the flexibility stakeholders need in evaluating standards and the trials to implement them.³⁰⁴ We find that such a course should assist telematics providers in further developing their offerings as they migrate from analog to digital based telematics systems.³⁰⁵ APCO has recently adopted a resolution recommending a non-regulatory approach to telematics.³⁰⁶ We recognize that stakeholders, including telematics providers, are currently participating in ongoing government efforts and programs to encourage the implementation of E911 programs and the technical innovations that telematics providers can contribute. We urge these providers and new entrants to continue involvement in these programs.³⁰⁷

D. Resold and Pre-paid Calling

91. We next decide whether resellers that use licensees' facilities to provide wireless voice service to consumers should have an independent obligation to provide access to E911 service. We find that we should place an obligation on resellers³⁰⁸ and pre-paid calling providers (collectively "resellers") to comply with our enhanced 911 rules, to the extent that the underlying facilities-based licensee has deployed the facilities necessary to deliver enhanced 911 information to the appropriate PSAP. We recognize, however, that the ability of resellers to comply may be complicated, and therefore, we

³⁰² See *Ex parte* Letter from W. Ball, Vice President, Public Policy, OnStar Corporation to M. Dortch, Secretary, Federal Communications Commission (Oct. 15, 2003) (concerning meeting with WTB staff on the potential approaches for delivery of data that are being considered – "... leveraging the current network, development of a national routing database, enhanced functionality of telematics units, and development of internet-based capabilities."). See also, ComCARE Alliance comments at 40-45.

³⁰³ See Public Notice, "Agenda for the April 29, 2003 Meeting of the Commission's Wireless E911 Coordination Initiative," DA 03-1172 (Apr. 29, 2003); Public Notice, "Agenda for the October 29 and 30, 2003 Meeting of the Commission's Wireless E911 Coordination Initiative," DA 03-3035 (Oct. 3, 2003).

³⁰⁴ ComCARE Alliance reply at 9.

³⁰⁵ See generally, MBUSA comments at 11-12; OnStar comments at 14.

³⁰⁶ APCO News Release (Jan 3, 2003) (stating that there must be a close working relationship between the public safety community and telematics).

³⁰⁷ See U.S. Department of Transportation (DOT) Wireless E9-1-1 Initiative (including, e.g., Priority Action Plan) <http://www.itspublicsafety.net/wireless/htm>; USDOT ITS Public Safety Program, <http://www.itspublicsafety.net/index/htm>; Emergency Services Interconnection Forum (ESIF) of the Alliance for Telecommunications Industry Solutions (ATIS), <http://www.atis.org/atis/esif/esifhome.htm>; see *supra*, note 2 (concerning Federal Communication Commission's E911 Coordination Initiative; see also, <http://wireless.fcc.gov/outreach/e911/index.html>).

³⁰⁸ For purposes of this order, "resellers" include mobile virtual network operators (MVNOs), who like traditional resellers, do not necessarily own their own spectrum and usually has no network infrastructure. Also like some resellers, MVNOs have business arrangements with licensees to buy minutes of use for sale to their own customers. Unlike resellers, MVNOs typically have brand recognition in another market and use that branding to offer customers not only wireless service, but other products and services from their core business. See "What is a MVNO," available at <http://www.mobilein.com/what_is_a_mvno.htm>.

establish a period of time to allow resellers to come into compliance.

92. Background. Resellers offer service to consumers by purchasing airtime at wholesale rates from facilities-based providers and reselling it at retail prices.³⁰⁹ The resale sector accounts for approximately 5 percent of all mobile telephone subscribers.³¹⁰ Some resellers, such as Virgin Mobile and Boost Mobile, enter into agreements with a single nationwide licensee to provide their customers' service. Other resellers, however, enter into agreements with multiple licensees. TracFone, for example, has agreements with "dozens" of facilities-based licensees.³¹¹

93. Discussion. We begin our analysis by determining whether resold voice services should be required to comply based on the four criteria set out in the *E911 Scope NPRM*.³¹² First, resold voice service, like voice service provided by licensees, interconnects to the public switched network. Further, as commenters noted, service provided by resellers is indistinguishable from service provided by licensees, and therefore, consumers of resold service would have the same expectations as consumers of licensees' service with respect to having access to enhanced 911 service.³¹³ Additionally, as resellers commented, they are direct competitors of facilities-based CMRS licensees.³¹⁴ Finally, as licensees have shown through their deployment of the infrastructure necessary for enhanced 911 to occur, it is technically feasible to comply with our rules, and because resellers use those same facilities, it is by extension technically feasible for them to comply as well.

94. We are concerned, however, about the operational obstacles resellers may face in complying with our rules. As noted above, some resellers enter into agreements with multiple licensees in order to offer larger calling area plans to their customers.³¹⁵ Our rules allow licensees to determine how best to comply with the automatic location requirements of our rules.³¹⁶ Some licensees have chosen to comply by deploying technology into their networks that allows them to locate the handset through triangulation or some other network-based solution. Others, however, have chosen to meet the requirements by using GPS-enabled handsets or through a hybrid handset-based solution that is assisted by the network, such as assisted GPS. Not all licensees, therefore, have selected the same method for compliance.

³⁰⁹ See Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services, *First Report and Order*, 11 FCC Rcd 18455, 18457 (1996); see also Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, WT Docket No. 02-379, *Eighth Report*, FCC 03-150 (July 2003). This is distinguished from agents of licensees. Consumers that sign up for wireless voice service through an agent are currently covered by our rules because the service they receive comes from a covered licensee. An agent of a licensee offers the licensee's services to consumers, as opposed to offering a voice service directly to consumers. For example, Radio Shack is an agent for Verizon Wireless and Sprint PCS. Its role is to sign up customers for those licensees. Verizon Wireless or Sprint then activates the service and bills the customer under its brand name. A reseller, such as Virgin Mobile or TracFone, however, signs customers up to its service, which is provided over the facilities of Sprint or Verizon Wireless, activates their service, and bills them under their brand name.

³¹⁰ See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, WT Docket No. 02-379, *Eighth Report*, FCC 03-150 para. 122 (July 2003).

³¹¹ See TracFone comments at 10.

³¹² See *E911 Scope NPRM*, 17 FCC Rcd at 25581, para. 13.

³¹³ See CTIA comments at 3-4; Sprint comments at 5; TruePosition comments at 3.

³¹⁴ Virgin Mobile comments at 10.

³¹⁵ See TracFone comments at 10.

³¹⁶ See generally 47 C.F.R. § 20.18.

95. Those resellers that have entered into agreements with multiple licensees would need to offer handsets to their customers that are capable of supporting the choice made by the underlying facilities-based licensees. For example, if a reseller has partnered with a licensee that has deployed a handset-based solution in Seattle, but a network-based solution in Buffalo, the reseller, like the underlying facilities-based licensee, would need to make certain that its handset offerings in those areas are capable of providing Phase II location information through the technology chosen by the underlying facilities-based licensee. Similarly, if the above scenario implicated two licensees instead of one, the reseller would need to ensure that the handsets offered to customers in the respective service areas are capable of transmitting Phase II location information through their chosen technologies.³¹⁷ As detailed below, in recognition of this obstacle we will provide a conversion period for resellers to allow them time to make the necessary changes in their handset offerings to ensure that they are capable of complying with the enhanced 911 rules.³¹⁸

96. Having found that resellers meet the four criteria, we decide that resellers will be required to offer access to enhanced 911 service. By imposing a requirement on resellers, we minimize the possibility for confusion by consumers, who expect all of the benefits of wireless service, whether provided by a licensee or a reseller. We find this to be a sound outcome not only for the reasons stated above, but also because the most likely and logical place for the customer of a reseller to turn for assistance if it has a problem with performance is the entity that holds itself out to the customer as the provider of service. For these reasons, we place an obligation on resellers to ensure that their customers have access to enhanced 911 service.

97. We further conclude, however, that resellers only have an obligation to ensure access to 911 service to the extent that the underlying facilities-based licensees offer access to 911 service.³¹⁹ We sought comment on this issue in the *E911 Scope NPRM*. As commenters asserted, resellers lack control over the underlying licensee and therefore should not be liable for its failure to deploy the needed facilities in a timely manner. We agree with these commenters and decide that by having the resellers' obligation only arise once the underlying licensee has made the necessary upgrades; we are able to address those commenters' concerns about the lack of control over the facilities of licensees.³²⁰ Therefore, licensees that meet the E911 compliance obligations through GPS-enabled handsets and have agreements with resellers will not be required to include the resellers' handset counts in their compliance percentages.³²¹

98. We note that the obligation we are placing on resellers is the responsibility of each reseller. We are persuaded by the record in this proceeding in which resellers and licensees generally agreed that the obligation should not be shared or negotiated between the parties.³²² We understand resellers' concern that information about their business needs to be protected from competitors, including the underlying licensees with whom they have agreements. By making the obligation the reseller's responsibility there should be no need for licensees to request information on any reseller's compliance.³²³ Additionally, we understand licensees' concern that they lack control over resellers with whom they have

³¹⁷ See Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Third Report and Order*, 14 FCC Rcd 17388, 17414-15, paras. 55-58 (1999).

³¹⁸ See Virgin Mobile comments at 9; Sprint comments at 6; TracFone comments at 14.

³¹⁹ See TracFone comments at 9.

³²⁰ Hop-On Wireless comments at 2.

³²¹ See 47 CFR 20.18(g).

³²² See e.g., Virgin Mobile comments at 3; Sprint comments at 1; Nextel comments at 4; Verizon Wireless reply at 10.

³²³ See Virgin Mobile at 3; Verizon Wireless reply at 10.

agreements. As some licensees note in their comments, resellers make their business decisions and the licensee's role is limited to providing the needed capacity or airtime. Therefore, licensees that meet their enhanced 911 compliance obligations through GPS-enabled handsets, including assisted GPS handsets, and have agreements with resellers, will not be responsible for ensuring that these resellers provide handset-based E911 location technology.³²⁴ For these reasons, we agree that the obligation should be the reseller's alone.³²⁵

99. We recognize that resellers will need time to comply with this requirement, and as we did with the underlying licensees, we will allow time for compliance. We are also mindful of the fact that the typical user of resold service is someone that may use the phone only occasionally and therefore may be reluctant to purchase a new handset. We therefore decide that an appropriate timeframe for resellers to comply with our rules is one year after the full compliance date for licensees, December 31, 2006. By selecting this date, we are ensuring that resellers have an opportunity to make the necessary changes to their handsets to ensure compliance.³²⁶ Additionally, we decide that the rule will only apply to handsets sold after that date, which recognizes the reality that customers of resellers may be reluctant to replace their handsets. In the interim, we encourage resellers to take whatever steps they can to bring access to enhanced 911 service to their customers.

100. We, therefore, conclude that resellers will have an affirmative obligation to provide access to enhanced 911 service with the obligation arising only to the extent that the underlying facilities-based licensee complies with our rules. Moreover, the obligation on resellers is an independent obligation to ensure that it does not impact the licensees' obligations. Finally, we will not impose this requirement on resellers until December 31, 2006, recognizing that time will be needed for them to alter their handset offerings, and the requirement will only apply to new handset sales, not replacement of existing handsets. We also encourage resellers to take the steps they can before the compliance date to provide their customers access to enhanced 911 service.

E. Disposable Phones and Personal Data Assistants

101. We next decide whether disposable phones and personal data assistants (PDAs) should be required to comply with our enhanced 911 requirements. In the *E911 Scope NPRM*, we sought comment on whether these devices should be required to comply with our enhanced 911 rules. Having decided that the obligation for ensuring access to enhanced 911 service is the responsibility of the resellers, pre-paid calling providers, and licensees, we find it is unnecessary for us to place a separate requirement on these devices. These entities are best able to ensure that the devices they offer their customers for use with their service are capable of transmitting the required callback and location information through the means they have chosen to ensure such information is transmitted.

102. Under our current rules, licensees have an obligation to provide enhanced 911 service. Through this Order, we are extending that obligation to resellers and pre-paid calling card providers. These entities typically decide which handsets to offer for use with their service. These are the entities that provide consumers wireless voice service. Therefore, by placing the obligation on these entities, we ensure that the handsets they offer are capable of meeting the enhanced 911 requirements contained in our rules. We, therefore, do not need to impose a separate obligation on disposable phone manufacturers.

103. By affirming the obligation on wireless providers to ensure that the handsets they use are capable of fulfilling their obligations, we are not, as one commenter noted, making the business plan of

³²⁴ See 47 CFR 20.18(g).

³²⁵ See Sprint comments at 7.

³²⁶ See TracFone comments at 13; Virgin comments at 7; Hop-On Wireless comments at 1.

disposable phone manufacturers "infeasible."³²⁷ We are mindful of the fact that these devices offer consumers a low-cost handset, which may allow more consumers access to wireless voice service. This in turn may allow more consumers access to 911 service, which is clearly preferable to no access to such service. We are aware of the additional costs that would be incurred to enable these handsets to transmit Phase II location information through hybrid and GPS-based systems. We are also mindful, however, of the public safety benefits of providing access to enhanced 911 features. To the extent that these devices do not incorporate the software needed to operate on hybrid enhanced 911 systems or GPS to operate on systems using that technology, the resellers and licensees that offer service with such devices would need to ensure that they have chosen a network-based solution. As Hop-On Wireless noted in its comments, disposable phones are already capable of relaying a callback number.³²⁸ Additionally, to the extent that the underlying provider uses a network-based method for relaying location information, disposable phones are capable of providing "infrastructure related [location] information."³²⁹ These two capabilities should make the existing disposable phones compliant with some licensees and their resellers, assuming the disposable phones are used in conjunction with network-based location technologies. We, therefore, conclude that there is no need to impose a separate obligation on disposable phone manufacturers.

104. We reach the same conclusion for PDAs. Again, wireless voice service providers have an obligation to comply with our rules. They, therefore, are in a better position than the Commission to make certain that devices offered to consumers are capable of meeting those compliance obligations. Action on our part to place a separate requirement on PDAs, like disposable phones, is unnecessary. Instead, the Commission will rely on licensees, resellers, and pre-paid calling providers to ensure that the devices they offer consumers do not hinder them in their efforts to comply with our rules.

F. Automated Maritime Telecommunications Systems

105. We next decide whether automated maritime telecommunications systems (AMTS) licensees should be required to provide access to enhanced 911 service to the extent that they offer two-way switched voice service. Based on the record developed in this proceeding, we decide not to extend our 911 service rules to AMTS licensees at this time.

106. As we noted in the *E911 Scope NPRM*, AMTS is a specialized voice and data service used primarily by tugs, barges and other vessels on waterways. As commenters explained, the specialized groups of consumers that use this service have little or no expectation of being able to reach a PSAP by dialing 9-1-1.³³⁰ Instead, these users reach emergency service personnel by radioing the Coast Guard for assistance. Additionally, as the commenters point out, AMTS does not necessarily interconnect to the public switch network; rather, it is primarily a dispatch service.³³¹ Further, based on the spectrum available for each license to an AMTS licensee, about 2 MHz, the amount of traffic capable of being carried over that licensed spectrum is so small as to make it impracticable for these licensees to offer CMRS-like voice service in any meaningful way, thus hindering their ability to compete with traditional CMRS service providers.³³² Finally, commenters note that the technical obstacle to providing 911 service are substantial, noting problems such as priority access from dispatch service and other changes that would need to be made to the equipment, software and telephone systems.³³³ While these obstacles alone

³²⁷ Hop-On Wireless comments at 2.

³²⁸ See Hop-On Wireless comments at 2-3.

³²⁹ See *id.*

³³⁰ See Paging Systems reply at 2-3; AMTA comments at 5; Mobex Network Services comments at 2-3.

³³¹ See Motorola comments at 6.

³³² See AMTA comments at 6; Mobex Network Services comments at 5.

³³³ See Motorola comments at 7; Mobex Network Services comments at 4.

would not necessarily be persuasive, however, when taken together with the fact that the other criteria are not met, we find that AMTS licensees should not be required to comply with our enhanced 911 requirements at this time.

V. SECOND FURTHER NOTICE OF PROPOSED RULEMAKING

A. Integration of Ancillary Terrestrial Component

107. Background. When we adopted the *E911 Scope NPRM*, we had not yet rendered a decision in our proceeding to determine whether to allow flexibility in the delivery of MSS communications in the 2 GHz,³³⁴ L-band,³³⁵ and Big LEO³³⁶ bands. The Notice of Proposed Rulemaking in that docket (IB 01-185) explored issues concerning MSS licensees' integration of an ancillary terrestrial component ("ATC") with their networks using assigned MSS frequencies. In the *E911 Scope NPRM*, we recognized that the issues raised in the ATC proceeding could have an effect on satellite carriers' ability to implement both basic and enhanced 911 (e.g., MSS carriers with ATC would likely have access to ground-based interconnection points in a manner similar to that of cellular and PCS licensees, critical to routing 911 calls to the nearest PSAP).³³⁷ Accordingly, we sought comment on a number of issues concerning the impact of ATC on basic and enhanced 911 requirements for MSS. Subsequently, we adopted a Report and Order³³⁸ in which we permitted authorized MSS systems to integrate ancillary terrestrial components (ATCs) into their MSS networks in the 2 GHz MSS band, the L-band, and the Big LEO band, subject to the authorized MSS system meeting certain substantial satellite service and integrated service criteria.³³⁹

108. Discussion. We sought comment on whether implementation of ATC would affect the Commission's analysis of MSS under its proposed general criteria for compliance with basic and enhanced 911 requirements. We believe that the record provides us with the legal authority to apply basic and enhanced 911 requirements to MSS providers with integrated ATC. As discussed above, two of the criteria that the Commission uses for analyzing whether a class of providers should comply with our basic and enhanced 911 rules are reasonable consumer expectations for 911 access and whether the service competes with traditional CMRS or local exchange services. We agree with those commenters who argue that an MSS carrier with ATC will have an increased ability to compete with terrestrial CMRS.³⁴⁰ This derives from the fact that ATC enables an MSS carrier to have additional local interconnection via ATC base stations.³⁴¹ We believe consumers will not be likely to distinguish between a traditional CMRS

³³⁴ The term "2 GHz MSS band" is used in this Order to refer to the 2000-2020 MHz uplink (Earth-to-space transmissions) and 2180-2200 MHz downlink (space-to-Earth transmissions) frequencies.

³³⁵ The "L-band" is a general designation for frequencies from 1 to 2 GHz. In the United States, the Commission has allocated L-band spectrum for MSS downlinks in the 1525-1544 MHz and 1545-1559 MHz bands and for MSS uplinks in the 1626.5-1645.5 MHz and 1646.5-1660.5 MHz bands. See 47 C.F.R. § 2.106.

³³⁶ The term "Big LEO band" is used in this Order to refer to the 1.6/2.4 GHz bands. In general, the Big LEO MSS systems rely on uplinks within the 1610-1626.5 MHz band and downlinks in the 2483.5-2500 MHz band.

³³⁷ *E911 Scope NPRM*, 17 FCC Rcd at 25598-99, para. 55.

³³⁸ *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, FCC 03-15, 18 FCC Rcd 1962 (2003) (*Decision on MSS Flexibility Decision*); *Errata* (rel. March 7, 2003), *appeal pending*, *AT&T Wireless Services, Inc. and Celco Partnership d/b/a Verizon Wireless v. FCC*, No. 03-1191 (D.C. Cir. filed July 8, 2003).

³³⁹ For a full discussion of these criteria, see *MSS Flexibility Decision*, 18 FCC Rcd at 1999-2016, paras. 66-102, and *Order on Reconsideration*, IB Docket No. 01-185, FCC 03-162, 18 FCC Rcd 13590 (2003).

³⁴⁰ See AWS comments at 3; APCO comments at 6-7; T-Mobile reply at 6-7; Verizon Wireless reply at 8-9.

³⁴¹ See, e.g., Globalstar comments at 13, MSV comments at 21-22 (noting that despite that availability of additional interconnection points, ATC base stations will likely cover a small geographic area).